

AMERICAN VETERINARY REVIEW

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AMERICAN VETERINARY REVIEW.

OCTOBER, 1911.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, August 15, 1911.

DISLOCATION OF THE PERFORATUS CALCANEAN CAP.—

Although not very common this injury has, however, been recorded in veterinary journals and its symptomatology is well described in our text books. Among the most recent description is the excellent article from Prof. Hendrickx of Belgium, published in the *Annales de Médecine Vétérinaire* of Brussels. The symptomatologic history is classic. Resulting from several various causes which are yet rather undetermined, it has been observed according to the various cases recorded after running, with fall backwards, violent kicking backwards, with or without fall, slipping, sudden stopping while in full gallop, etc., etc.

The objective symptoms are those of a violent pain in the calcanean region, the animal being lame on three legs. The leg is immobile and in extension. There is also a diffused œdematous swelling on the posterior face of the hock which after several hours or days has become defined and on one face of the os calcis, most commonly the external, at three or four centimeters from the summit of the bone, there is noticed a funicular band, extremely stretched, which can be easily pushed back over the

bone, but returned again more or less suddenly as soon as the relaxation is allowed. Whether these displacements of the cap take place outwards or inwards they are accompanied with a kind of snap perfectly perceptible.

This symptomatology has again been recalled in the same Belgian paper by Prof. N. Zwaenpoel and Mr. G. Declercq, and has given them the opportunity for calling attention to two points relating to the disease, the pathogeny, which is yet rather undetermined, and again the treatment.

* * *

In relation to the pathogeny, after a review of the various determining causes and quoting the saying of Pader: "The precise causes of this accident still remains doubtful, as is proved by the few observations relating to it"—then the writers have asked themselves, if by surgical experiment some light could not be thrown on the subject. Why should this dislocation be more common to the out than to the inside. "For the realization of this dislocation, first the rupture of one of the two aponeurotic bands which hold the cap in place should have taken place. If one is ruptured, it goes by itself that the tendon, not being held on that side, should slide on the opposite." The Professor and his colleague divided the inner band only, then the outer, and then both, with what results: "With the section of the inner branch they failed in having any displacement of the cap, which remained in its position, while the division of the external was followed by dislocation inwards"—a peculiar condition which seemed to me in contradiction with clinical records, which say that the accidental luxation takes place ordinarily outside and exceptionally inside.

The authors then inquired if the internal dislocation following the section of the external band was more due to the oblique disposition of the gliding surface of the os calcis than the peculiar situation of the tendon, and they divided the two bands: the dislocation took place on the inside. They cut the tendon of the

bifermoro-calcaneous muscle and the internal dislocation remained.

To resume, the luxation is due to several factors:

1. The contraction or rather the excessive stretching of the perforatus tendon, probably insufficient, as it ought to produce the dislocation inwards instead of outwards, as it is more commonly seen;

2. An insufficient stretching of the tendons of the gemelli; when then the curve of the perforatus disappears and the dislocation outwards is possible;

3. A sudden motion of laterality of the point of the hock or of the entire hock, acting as an essential factor in the accident, while the condition of the perforatus and the gemelli, though indispensable factors, are but of secondary order. The external band of the calcanean cap is more resisting than the inner one and this must give way oftener.

* * *

The prognosis of this accident is generally serious—although there may be some varieties in the extent of the lesion and it is a question to consider if an animal ought to be treated with chances of useful recovery. Local applications of various natures have been resorted to, immobilization of the joint, irrigations, etc., etc., have been recommended and tried with doubtful results. The suture of the injured band has also been advocated. Vogt and Hendrickx have recommended the tenotomy of the perforatus performed below the calcaneán apex. The patient of Vogt had a large high spavin as result, and that of Hendrickx a diffused osteitis of the os calcis.

In conclusion of their article, Prof. Zwaenpoel and Mr. Declercq say: "Eight days after the accident when the inflammatory phenomena have subsided we have performed tenotomy of the perforatus *a few centimeters above the point of the hock*, where the perforatus comes out from under the tendon of the gemelli; the pain and the mechanical difficulty disappeared almost instantaneously. The animal was put to pasture, recovered and

was able to perform his work perfectly in a short time." For the authors this tenotomy, performed above the hock, is better indicated than the metatarsal, as it relieves completely the stretching of the cord, due to the muscular contraction of the fleshy body of the perforatus and that resulting from the closing of the angle of the hock.

* * *

EXPERIMENTAL MEDICINE has made, since its first introduction in sciences, very gradual progress and its application is now reigning extensively all over the world, whether it finds its material in human or in veterinary pathology, and whether it has for its object diseases of men or animals, everywhere experimental researches are carried out and the results obtained are recorded in scientific journals.

Among the most recent, which were published in the *Berliner Klin. Wochen.* are those of Uhlenhuth and Mulzer on the *inoculation of syphilis in rabbits*, a subject which is not without interest to veterinarians, besides that of comparative medical experiments.

The first experiments of inoculation of human syphilis to rabbits were made by Bertarelli in the eye. Parodi afterwards inoculated it in the testicle of rabbits. Uhlenhuth and Mulzer renewed their experiments in the testicle and in the blood. The infection is quite easy—they obtained 10 out of 17 animals inoculated. By successive inoculations from testicle to testicle, they had good results to the sixteenth passage, the virulency increasing after each one. The incubation then gradually diminishes, from 8 to 12 weeks it dropped to 6 and 4. The intensity and the severity of the testicular lesions increased also.

To the clinical point of view, the authors consider that experimentally three forms can be obtained:

1. Ulceration of the skin and scrotum, sometimes not localized to the place of incubation. This ulceration corresponds to the primitive chancre of man and contains numerous spirochetes. Testicles are ordinarily free.

2. There is chronic orchitis, with scrotum free from lesion.

3. Total or partial thickening of the testicular envelopes, diffused or limited periorchitis.

All these accidents may disappear spontaneously. They are not followed by secondary accidents, although there are cases when general affection occurs after the scrotal inoculation, as it has also been observed with an intra-ocular infection.

However, can a generalized syphilis be promoted by inoculation made directly in the blood, was the question which the authors tried to solve. Their first attempts were unsuccessful. But by successive passages in rabbits, they finally succeeded in obtaining very virulent virus and in four adult animals obtained lesions of circumscribed syphilitic orchitis and periorchitis, testicular and scrotal erosions, corneal ulcerations. Two rabbits which had died without presenting any lesions had their organs full of spirochetes. In resorting to young rabbits and making the inoculation by intra-cardiac injection, although some animals did not stand the operation and died, those which survived presented peculiar manifestations.

"Shortly after the injection, the animals dropped on their side, with difficult respiration, but rallied and presented no trouble for the first weeks. After six or ten weeks the skin became squammy, appetite diminished and noticeable loss of flesh were observed."

"Then appeared on each side of the nose small little indurated tumors containing spirochetes. A similar one is observed near the tail. There were cutaneous ulcerations on the chine, ocular region. Conjunctivitis and keratitis were often present."

"Then the claws became swollen and fell off leaving superficial ulceration containing spirochetes. Sometimes there were papulo-ulcerous syphilids."

All these syphilitic manifestations may disappear but, in the human disease, relapses are frequent."

* * *

The above remarks relating to a domestic animal, found so extensively everywhere, and which might become infected naturally

(?) outside of the laboratory, are interesting, and to complete this review in Experimental Medicine, let me glance at the *Researches on the Etiology of Scarlatina*, by Prof. G. Bernhardt, reported in the *Deutsche Med. Woch.* and which I find in the *Presse Médicale*.

The question of the inoculation of scarlatina to animals is actually at the order of the day. Cantacuzene has presented recently to the Society of Biology the result of his researches on this subject. He succeeded in giving scarlatina to monkeys by injecting blood of sick individuals, taken at the beginning of the eruption, or pericardic fluid or tracheo-bronchial glands.

Landsteiner and Levaditi inoculated in the throat and under the skin of chimpanzees products from the amygdals or the blood taken from scarlatina patients and promoted in them a febrile infection characterized by a sore throat similar to that of scarlatina and a generalized eruption. At the autopsy of one, lesions of the kidneys and of the skin resembling those of scarlatinous infection, with a swelling of the glands, were found.

Bernhardt has renewed the researches on a series of various species of monkeys, and has used for material of inoculation the thick whitish coating of the tongue of a scarlatinous individual, which was crushed in a mortar with serum. This was shaken for an hour and 4 c.c. were injected in the skin of the armpit of a monkey, deposited on the tongue, the cheeks, the amygdals after a stiff rubbing of the mucous.

The next day the first inoculated monkey had fever and swelling of the glands. After three or four days the animals were very sick and their tumefied glands were removed and used for inoculation to other monkeys. With the sterilized glandular preparations one monkey was inoculated. After four days his temperature was 39.9° C., he had generalized adenopathy and the tongue thickly coated. The skin was red on the neck, the shoulders and the face. The well developed miliary eruption was present on the shoulders, neck and trunk. The next day desquamation of the skin began. Temperature dropped to 34.5° C. The monkey recovered entirely."

Bernhardt continued his experiments in using sterilized solutions filtrated on Berkefeld, and of four experiments two were negative and two positive. With only the frottis of a lingual coating of a man upon the buccal mucous of a monkey, a scarlatiniferous disease, with 18 days' incubation, was produced. An emulsion, made with an inguinal gland from the body of a dead child inoculated to a monkey, gave rise in six days to symptoms of scarlatina and followed by death the thirteenth day of generalized septicæmia.

Other results which were also obtained during these experiments are now the object of other researches which will be referred to later on.

* * *

RAILROAD DISEASE OF BOVINES.—In glancing over the *Revue de Leclainche* for the month of July, I came across the résumé of an article from the *Berliner Tierärztliche Wochenschrift*, published some time ago, on the pathogeny and treatment of the so-called affection and having failed to find anything relating to it in any publication at my disposal, I thought the subject might be interesting to our readers, as it has been to me.

Prof. Dr. Schmidt is the German author. "In Germany is designated under the name of *Railroad Disease*, *Railroad Fever*, *Traveling Fever*, an affection of bovine consecutive to a journey by rail.

The disease was described in the works of Friedberger and Frohner and those of Hutyra and Marek, and been well observed by Estor, Villagio and Saxony veterinarians. It especially affects cows in advanced stage of pregnancy, which had just been taken off from pastures. It is, on the contrary, rare among animals fed in the stable. In the warm season, from April to September, it is more common.

The manifestations can be grouped in two periods: (1) One of excitement; (2) one of depression.

The first signs consist in a kind of atony in the glance of the eye and paresia of motions. The hind legs are often crossing

each other by staggering gait, which is very uncertain. The animal remains lying down, often changing his position. The anterior legs seem to be yet able to stand up, while the hind quarters appear paralyzed.

In the meanwhile sensorial troubles increase. While in the same animals the ears are constantly moving, listening to the slightest noise, and the eye reacts by the simplest excitation, the cows are generally somnolent, sleepy, stretched on the bedding, with the legs slightly flexed, the head brought back as in parturient fever. The eyes are closed and the pupils dilate. The temperature remains about normal between 38° and 39° C. The pulse, frequent in the period of excitement (sometimes up to 120 per minute), soon returns to normal; also the beatings of the heart are regular. The respiration is, during the whole disease, difficult, costo-abdominal, with irregular rhythms. Moaning is frequently heard during expiration.

Appetite and rumination have disappeared from the start. Motions of the rumen and intestine are absent or very rare. The animals refuse all drinks or again take them in abnormal quantity. There is nothing wrong about the genital organs. Movements of the foetus are generally very visible, the udder is filled with milk and yet elastic. Almost always urination is stopped and the bladder is distended by a urine, yellow orange color, alkaline and albuminous.

The prognosis is unfavorable, death occurring in coma from 24 to 48 hours after the first manifestations.

* * *

Writers on this disease insist on the absence of constant organic lesions. Voigtlander finds all the organs normal, except the rumen, which is almost empty. "He has never seen it in such a state of vacuity." Weigel makes the same remark but notices the congestion of the liver, of the intestine and of the uterus. For Noack and Estor there is an alteration of the muscles, they are red or black brown in color. There is also a

fatty degeneration of the parenchymatous organs. Schmidt has failed to detect any lesion and the muscles were found normal.

There is no positive data in relation to the pathogeny and etiology of the disease. The idea of want of food, suggested by the condition of the empty rumen, is not to be considered. Villagio thinks it to be a primitive affection of the muscles, with secondary nervous troubles. Estor is somewhat of the same opinion and considers the disease very much like hemoglobinuria of horses.

The supposition of a trouble of the circulation in the nervous centers seems to be the most plausible. As remarks Estor, a long journey on railways imposes on these animals an enormous muscular effort, they must stand in equilibrium, with all their muscles in contraction. This condition is made more severe in cows advanced in pregnancy on account of the weight of the uterus and its contents. An enormous quantity of blood is held back in the muscles; the uterus and placenta are also gorged with blood, the udder likewise, which, according to Rubeli, retains itself alone one-fifth of the total mass of the blood.

The result is an excessive anæmia of the parenchymatous organs, especially the lungs and an hematosis insufficient. The pathogeny of these conditions is very comparable to that of parturient fever, as indicated by Hutyra and Marek.

The treatment of railroad fever was simply symptomatic; absolute rest, bleeding, friction of the loins, morphine, strychnine, alcohol * * * have been recommended, or again, tartaric acid, wet blanketing, coffee or digitate, etc.

In 1901 the author thought of trying the systematic treatment of parturient apoplexy by injection of a solution of iodide of potassium in the udder and later he gave that up to replace it by the simple injection of air. The result was as certain as it was quick. Recovery is obtained as easily as in parturient fever. One injection of caffeine completes the treatment.

To resume: 1. "Railroad Disease" is due to an anæmia of the central nervous center caused by the journey and associated to a pathogenic action upon the vaso-motor system. 2. The best

mode of treatment consists in injection of air in the udder, completed by the use of cardiac tonics. 3. Proper prophylactic method is still unknown.

* * *

INFLAMMATORY TUBERCULOSIS AND VASCULAR GLANDS.—This interesting pathological relation was recently the object of a communication before the *Academy of Medicine*, which was presented by two learned pathologists, Drs. Poncet and Leriche. After recalling the rarity of specific, follicular tuberculosis, on the level of the bloody vascular glands, thyroid, pituitary, superrenal, ovaries, etc., for them on the contrary, inflammatory tuberculosis is very common in them. In the presence of an attack from Koch's bacilli, these glands react by processes of cirrhosis, adenomatosis, without characteristic follicular lesions. Under the effect of a continuous bacillar irritation, bacterial or toxic, these glands are placed in secreting inferiority or perform only altered secretions; and from these result all kinds of peculiar diseases, erroneously called primitive and wrongly named essential, whose symptomatology, more or less severe, completely covers the real cause which is then discreetly concealed.

It is thus that the inflammatory tuberculosis of the thyroid gland becomes the cause of various troubles of growth, that it promotes by the presence of the thyroiditis, varieties of goitre and their accidents and complications.

It is the same for the development of the skeleton, with the lesions of the hypophysis.

With the pancreas, inflammatory tuberculosis promotes numerous cases of diabetes, and with this class of sicknesses phthisis, which kills them, far from being the closing of their sickness, is but the result of a tuberculization which had had its beginning in diabetes from the start.

It is no less logical, according to the authors, to attribute to inflammatory tuberculosis, quantities of sclerous superrenalitis, with unknown etiology and which give rise to more or less serious circulatory troubles, to tendency to collapse, arterio-

sclerosis and atheroma, very frequent diseases whose pathology can thus be explained.

To ovarian and testicular cirrhosis, tubercular in nature, are due sterility and numerous cases of abortion. Tuberculosis becomes a principal cause of spontaneous abortion. The important part played by internal genital glands in the phenomena of development, growth of tissues and functions of the various organic apparatus, gives a valuable idea of the numerous mischievous effects of tuberculous infection in its inflammatory form.

From the résumé of their observations, Drs. Poncet and Leriche come to the conclusion that inflammatory tuberculosis is a great cause of glandular disequilibrium and that tuberculosis must always be present in the mind of the clinician.

*
* * *

ANTISEPTICS IN MINOR SURGERY.—The medical proverb says, "Better prevent than cure," and for this reason asepsy, when it can be applied rigorously, is always better than antisepsy. Still, this method, easy to be resorted to under certain conditions, is not always in others, such as in ordinary and specially in country practice. The use of antiseptics remains then necessary in most instances, if serious accidents, due to the presence of pus in wounds, are not to be expected.

Experimental researches, says Dr. Schwartz in the *Presse Médicale*, have demonstrated that microbial toxins were chemically constituted by alkaline-albumins. If then one wishes to neutralize their action, as long as they are the cause of all accidents, it is necessary to resort to acid substances to realize it. Phenic acid has for a long time been considered as the choice antiseptic, but it has many inconveniences, and in some instances its use is somewhat difficult.

Dr. Schwartz has then resorted to a vegetal antiseptic, that is to say, existing in a natural state and not requiring any chemical preparation. It is the citric acid contained in lemon juice and which has been used for other purposes for years.

For a dressing one takes equal parts of aromatic wine and physiologic serum to which is added a few drops of the juice of a lemon, say from half to one or more, if necessary, and according to the importance of the dressing. A liquid of rosy coloration is thus obtained which gives no pain by its application, leaves no scar and has the following properties: antiputrid, stimulant of the living cells, neutralizing microbial toxins due to pathogenic germs. With this application, and advantageously, the surroundings of the wound can be coated over with tincture of iodine, even in anfractuosités, where it acts as a bactericid.

By a daily application wounds which had no tendency to cicatrization were rapidly modified. After a short time the purulent secretion would subside, the granulations would lose their greyish sanious appearance and assume a good coloration, with a manifest tendency to cicatrization.

The method is very simple and suggests its application in country veterinary practice.

A. L.

VETERINARIANS FROM "THE STATES" PAY A TRIBUTE TO THE MEMORY OF THE LATE PROFESSOR ANDREW SMITH.

As a result of the usual thoughtfulness of our esteemed *confrère*, Dr. W. Horace Hoskins, who has the happy faculty of thinking of the right thing just at the right moment, a number of his more intimate friends in the profession were allowed the privilege of taking part with him in paying a fitting tribute to the memory of Professor Andrew Smith, the pioneer in veterinary education in Canada. While all of the number were not able to accompany their leader to the grave (as the result of acute ailments and other causes), the little group which wended its way from the Prince George Hotel in the early morning of August 24, 1911, carried with them a silent expression from the entire profession from across the border line that Andrew

Smith was not forgotten, and that his name still lives. They proceeded to Mount Peace Cemetery, on the suburbs of Toronto, in carriages, and carried with them a beautiful floral wreath of magnolias, garnished with purple asters, which they placed upon the grave of their departed brother as a material expression of the dictates of their hearts.

Through the courtesy of Dr. R. S. MacKellar, of New York, we have received a photograph of the headstone of the late Dr. Smith, with the group standing on either side of the grave, upon which the wreath rests, Dr. Hoskins being the second one from the stone, on the reader's right. The eight gentlemen in



the group consist of Drs. B. W. Groff, Ohio; J. W. Tooley, Wis.; Otto Faust and R. S. MacKellar, N. Y.; Chas. R. Good, J. W. Sallade, J. H. McCarthy and W. Horace Hoskins, Pa.

A NEW law, which became operative July 1, provides for four veterinary inspectors for the Island of Porto Rico instead of two, as previously. Dr. T. A. Allen, of San Juan, has been appointed chief of the division. It is gratifying to note this activity in the Department of Sanitation of Porto Rico.

ORIGINAL ARTICLES.

BACTERINS AS AN AID IN WOUND HEALING.*

BY CHAS. H. JEWELL, VETERINARIAN, 6TH FIELD ARTILLERY, UNITED STATES ARMY, FORT RILEY, KAN.

Nothing since the introduction of antiseptics, by Lister, has been such a boon to the veterinary profession as has that of the discovery and practical use of bacterins in wound healing; at first used for chronic suppurative conditions, but now by many for all suppurative conditions, be they acute or chronic.

This line of work had its origin from the principles founded by Wright in his opsonic theory (that certain substances were produced within the blood to check the ravages of invading germs) and first made use of by practitioners of human medicine, but it fell to the lot of our profession to bring this line of treatment into general and practical use. In this work much credit is due to Drs. Archibald and Kinsley, who were the pioneers of this work among veterinarians; at the same time we must give credit to our commercial firms who early took hold of this line and introduced these products to the profession generally, at a cost which enabled veterinarians to use them freely.

The general opinion among veterinarians is that bacterins are only applicable for chronic suppurative conditions, but I hope to make it plain by this paper that they are equally as effective in the treatment of all wounds which are in all probability infected with pus-producing organisms. In our hospital work we find that we can in most instances save more than half the time, labor and expense of drugs and dressings by treating all infected wounds from the beginning with bacterins. In all

* Presented at the Forty-eighth Annual Meeting of the American Veterinary Medical Association, Toronto, Canada, August, 1911.

wounds the first thing necessary is to follow out the old rule, and that is to obtain good free drainage and let bacterins do the work through their increasing the resistance of the animal's system, which is thus fortified against pus-producing organisms. With its use wounds heal without the usual profuse flow of the old-time "laudable pus," and excessive granulation which we always see in this class of wounds is entirely lacking and likewise but little scar tissue remains.

In chronic suppurative conditions bacterins will bring about healing when all other efforts have failed, providing the wound has free drainage and all necrotic tissue or foreign bodies have been removed. If we are careful to do this our cures will be almost miraculous.

In open joints, open tendon sheaths and punctured wounds of the feet it is of great benefit, and the percentage of cures of these serious cases will be greatly increased by its use.

It is interesting to study microscopically the discharge of wounds which have been treated with bacterins. After four or five days under this treatment smears made and stained will show that the discharge is entirely free from pus organisms, and we have made repeated efforts from such cases to obtain cultures, but in most cases the culture medium remains sterile. This, I think, is a good argument in favor of treating all infected wounds with this method.

A Simple Method of Preparing Bacterins.—The simplest method in the production of bacterins which will give the desired results is conceded by all to be the best, and the method that we have carried out is the one recommended by Dr. A. T. Kinsley, of the Kansas City Veterinary College, and is as follows:

Make a culture medium of bouillon after the following formula:

Beef extract (Liebig's), 3 gms.

Soluble peptone, 10 gms.

Sodium chloride, chemically pure, 5 gms.

Water, one litre.

Mix and bring to the boiling point for a very short time, say two or three minutes; test to see that it is neutral or slightly alkaline, then filter through ordinary filter paper and divide this in clean, sterile flasks, each containing 100 c.c.; place in a steam sterilizer and bring to the boiling point for fifteen minutes upon three consecutive days. This media is then ready for inoculation with the pus from a suppurating wound not previously treated with bacterins. In inoculating, it is best to sterilize a platinum loop by passing it slowly through a flame several times and then from the depth of the wound take one or two loopfuls of the pus and place within the culture medium. This, after inoculation, should be placed in an incubator and kept at 38° C. for forty-eight hours; then it is taken out and placed in a dry sterilizer at 60° C. for one hour. Then to each 100 c.c. of this product we add seven or eight drops of carbolic acid to act as a preservative. Now it is ready to be bottled. The most convenient size bottles is 2 and 4 c.c., as this is the usual sized dose for administration. These bottles, with their corks, should be sterilized by subjecting them to dry sterilization at 160° C. for one hour. After being filled, seal the ends of the corks by dipping them in melted paraffine wax.

The above method can be accomplished and is by many practicing veterinarians with but little outlay, and it is surprising what can be done in this line by a little ingenuity. One can prepare a tight box for the culture and incubate this by means of a small lighted lamp or electric light, and a wash-boiler can be made into a good substitute for both a dry and steam sterilizer.

The product that you buy from the commercial firms is labeled to contain so many million dead bacterins per c.c.; this sounds very nice, but when it comes down to the practical results it makes no difference so long as we get the desired effect. All that is necessary is to make sure that you have a good growth within the medium, and if grown for forty-eight hours I can assure you the product will be satisfactory.

There are two ways to determine whether the growth within your medium is satisfactory: First, by macroscopical examina-

tion, noting carefully the change which has taken place, and, second, by making a smear and stain and studying this under a microscope, noting the classes of bacterins and their apparent number. The stained preparation in most cases reveal the streptococci in excess of other germs; then next comes the staphylococci and often some forms of bacilli, probably the bacillus pyocyaneus or coli communis; thus the product is in reality a poly bacterin.

Of the autogenous bacterins, or bacterins made from the pus of the animal upon which the product is to be used, I would say that it is only an occasional case where this product is more beneficial than the poly bacterins made in the manner described above. In our work we started with the use of the autogenous only, but after experimenting with the use of bacterins from one animal upon another we found that in most cases our results were just as satisfactory, and now we are using a product made from any animal upon all subsequent cases so long as the product lasts. In this way we make a great saving of time and bacterins.

Method of Using Bacterins.—We first inject 2 c.c. hypodermically as soon as we receive a case requiring this line of treatment, and follow this in four days with 4 c.c., and every four days subsequently we inject 2 c.c. until the pus entirely ceases to form, which is usually after the second dose. At all times use antiseptic precaution in making your injection. The seat of injection is usually the skin on either side of the neck.

Often after an injection we get a strong reaction similar to that from mallein, with considerable elevation of temperature and large, painful swelling at the seat of injection. This has been regarded by some as unfavorable and said to lower the resistance rather than raise it, but our experience has been invariably that following these reactions, the wound shows marked improvement immediately. Some might ask if we might not get a good many abscesses following the injection, but to these I would state that we have made many hundred injections without ever having this unfavorable termination.

The Future of Bacterins.—I wish to be pardoned if I transgress by wandering a little from the subject, but I consider this point of great importance to us.

This product has been worked upon to some extent as a prophylactic in strangles and other forms of shipping fever, also in canine distemper, and the results, I believe, warrant its further trial.

We used it on two occasions upon the arrival of young animals from the stockyards and the results were highly gratifying. The principle is the same as the vaccination against typhoid fever of man, and this has been proven by its general use in the army as a reliable preventive for this dread disease.

In this connection I wish to bring your attention to a case which I will refer to later in case reports of a horse treated for a punctured wound of the head involving the maxillary sinuses. This animal was treated with bacterins and healed in two weeks' time and later developed a well-marked case of tetanus; the bacterins were continued every four days and this animal passed through the attack without any great amount of discomfort, did not lose much in flesh, and made a complete recovery in a reasonable length of time.

Now, the question arises in my mind, did the bacterins so fortify this animal's system as to enable him to overcome the effects of the poison generated by the tetanus bacilli? Should this be the case this might be a great field for bacterins. I would not wish to pass my opinion upon a single case, but hope others will give it a trial and prove whether my supposition will bear the test of time.

I am firmly of the opinion that the result of this line of treatment is only in its infancy, and I predict a great future for bacterins in the above-mentioned line of veterinary medicines.

In the use of bacterins I would say that this product does not in each and every case produce the same desirable results. I would estimate that in 95 per cent. of the cases the results are most pleasing, but occasionally we may have one that the condition of the animal's system may differ from most others and

the results are not so gratifying. I have yet to see a single case upon which the bacterins were used that we did not get improvement, but this may go on for only a short length of time and then the case come to a standstill. In these cases some recommended nuclein along with the bacterins. I have not tried the combination enough to pass an opinion upon the results, but the theory seems plausible, for we well know that nuclein will increase the white cells of the blood, which are the ones to protect the system from infection.

I submit for your consideration the following case reports, which ought to convince the most skeptical the great benefits derived from the use of bacterins:

CASE NO. 1.

Mule with a large, lacerated wound on the right buttock, entered on January 19, 1911.

Treatment—Seaton inserted to give drainage from a deep pocket at the bottom of wound.

January 28—2 c.c. of autogenous bacterin injected.

February 2—4 c.c. of autogenous bacterin injected.

Discharged from hospital February 8. Time under treatment, twenty-two days.

CASE NO. 2.

Mule with deep, punctured wound on left haunch, entered January 30, 1911.

Treatment—Wound opened well and packed with gauze saturated with tincture of iodine.

February 4—2 c.c. of stock bacterin injected.

No further treatment was given this animal. Discharged February 8. Time under treatment, nine days.

CASE NO. 3.

Mule with deep, punctured wound on right shoulder extending upwards underneath the flexor brachii muscle and dis-

charging a stringy, straw-colored fluid resembling synovia, entered February 9, 1911.

Treatment—February 9—2 c.c. of stock bacterin injected.

February 14—4 c.c. of stock bacterin injected.

Discharged February 18. Time under treatment, nine days.

CASE NO. 4.

Horse with fistula of the submaxillary lymph glands following distemper, entered February 1, 1911.

Treatment—Swabbed with tincture of iodine for two weeks, with no improvement.

February 15—2 c.c. of autogenous bacterin injected.

February 20—4 c.c. of autogenous bacterin injected.

Discharged on February 25. Time under treatment, twenty-five days.

CASE NO. 5.

Mare with kick on outside of right elbow joint, entered July 16, 1910.

Treatment—Hot and cold irrigations, followed with white lotion.

August 4—Wound opened and iodine pack used.

August 5—Discharge of synovia from the wound.

August 10—2 c.c. of autogenous bacterin injected.

August 13—2 c.c. of autogenous bacterin injected.

August 17—2 c.c. of autogenous bacterin injected.

Discharged August 21. Time under treatment, thirty-six days.

CASE NO. 6.

Cavalry horse with a large, phlegmonous swelling upon the left shoulder extending from a punctured wound near the top of the shoulder to the pectoral muscles and back to the caput muscles. This swelling crepitated upon a pressure, showing that the infection was a gas-producing organism similar to "Welches bacillus." The effected parts sloughed and the skin was loosened over the entire area. At a point above the shoulder

joint a large slough took place which was about ten inches long by six inches wide. This case was entered on January 8, 1911.

Treatment—The pockets formed were opened and drained by means of seatons and all the necrotic tissue removed.

January 14—2 c.c. of autogenous bacterin injected.

January 19—4 c.c. of autogenous bacterin injected.

January 24—2 c.c. of autogenous bacterin injected.

January 28—2 c.c. of autogenous bacterin injected.

Discharged on March 20. Time under treatment, seventy-one days.

No excessive granulations filled the wound and after February 2 the only dressing used was olive oil and creolin to keep the parts soft.

CASE No. 7.

Mare with bruise on left haunch about 10 inches in diameter which filled with a collection of serum; entered February 15, 1911.

Treatment—Drained antiseptically and blistered, but did not fully absorb.

February 23—Wound laid freely open and 2 c.c. of stock bacterin injected.

February 27—4 c.c. of stock bacterin injected.

March 4—2 c.c. of stock bacterin injected.

March 10—2 c.c. of stock bacterin injected.

Discharged March 10. Time under treatment, twenty-three days.

CASE No. 8.

Cavalry horse with punctured wound of the face which entered the frontal sinus, and upon examination several pieces of broken bone were found; entered April 3, 1911.

Treatment—All detached parts of bone removed; irrigations daily with warm water.

April 6—2 c.c. of stock bacterin injected.

April 11—4 c.c. of stock bacterin injected.

April 16—2 c.c. of stock bacterin injected.

April 22—2 c.c. of stock bacterin injected.

April 26—2 c.c. of stock bacterin injected.

April 29—2 c.c. of stock bacterin injected.

Discharged May 3. Time under treatment, thirty days.

CASE No. 9.

Cavalry horse with kick on right hock, wound badly infected; entered April 26, 1911.

Treatment—Biniodide mercury blister.

April 26—2 c.c. of stock bacterin injected.

Discharged May 4. Time under treatment, eight days.

CASE No. 10.

A cavalry horse with a bad tear of the skin between the eyes and a bad puncture involving the bone. The skin tear was about five inches long. Entered April 24, 1911.

Treatment—Washed with antiseptics and sutured, requiring eleven stitches to close the wound. Dusted with iodoform powder and covered with collodion.

April 24—2 c.c. of stock bacterin injected.

April 29—4 c.c. of stock bacterin injected.

May 5—2 c.c. of stock bacterin injected.

May 7—2 c.c. of stock bacterin injected.

May 10—Suture removed. Discharged May 11. Time under treatment, seventeen days. During treatment no pus appeared upon this wound and it received no dressing whatever.

CASE No. 11.

A cavalry horse with a deep-punctured wound below the left eye, entering the superior maxillary sinus, which upon examination showed that the bone was badly splintered; entered March 19, 1911.

Treatment—On March 25 the animal was cast and a large piece of bone removed from the seat of the wound, the inferior maxillary sinus opened, and the partition separating the sinuses broken through to allow the drainage. There was a collection

of pus within the sinuses and a profuse nasal discharge from that side.

March 26—2 c.c. of autogenous bacterin injected.

March 30—4 c.c. of autogenous bacterin injected.

April 3—2 c.c. of autogenous bacterin injected.

On April 4 the wound was entirely healed and on this date tetanus symptoms developed, and as an experiment bacterins were continued.

April 13—3 c.c. of stock bacterin injected.

April 17—3 c.c. of stock bacterin injected.

April 21—3 c.c. of stock bacterin injected.

April 25—3 c.c. of stock bacterin injected.

During this time the animal was given four ounces of potassium bromide daily until May 13, when this was discontinued, as the horse was well on the road to recovery. Discharged May 30. Time under treatment, seventy-six days. This animal did so well under the bacterin treatment that it seems as though there must have been a marked benefit derived from its use, and this may be one of the future indications for the use of bacterins.

CASE NO. 12.

A bay horse afflicted with fistulous withers was brought to our hospital on September 9, 1910. This animal belonged to a farmer living near the post.

Treatment—Free openings made and good drainage obtained by the use of seatons smeared with biniodide mercury blister and the wound kept clean with plain water.

September 29—2 c.c. of autogenous bacterin injected.

October 3—4 c.c. of autogenous bacterin injected.

October 10—Another abscess formed and was drained as before.

October 19—2 c.c. of autogenous bacterin injected.

October 24—2 c.c. of autogenous bacterin injected.

October 30—Animal was brought back for examination and the wounds were entirely healed with but a small amount of scar tissue, and at the present time this animal remains perfectly

sound. One would have to look closely to find any scars about the seat of operation.

This cure in so short a time seems remarkable on account of the fact that no antiseptic precautions were used in dressing, since the case was taken care of by the farmer himself and returned only for injections. The time of the treatment of this animal was forty-five days.

CASE No. 13.

A pony with a nail puncture, right hind foot, entered May 2, 1911.

Treatment—The wound was opened up and dressed with pure creolin. On the second day a profuse discharge of synovia flowed from the wound.

May 3—2 c.c. of stock bacterin was injected and the foot soaked in bichloride solution, 1 to 1,000.

May 7—4 c.c. of stock bacterin was injected, and in the meantime the soaking with bichloride was continued.

May 15—The wound was dry and a dressing of tar and oakum used.

May 20—The animal was placed in a soaking stall and this was continued until June 4, and exercise was prescribed for the animal. Discharged June 19, practically as well as ever. Time under treatment, thirty-seven days.

SUMMARY.

1. Bacterins have proven themselves equally as useful in recent suppurative conditions as chronic ones.

2. By their use the profuse discharge of pus from all suppurative conditions quickly ceases.

3. Without good drainage and the removal of any foreign bodies or necrotic tissue we cannot expect healing to take place even with bacterins.

4. With their use we generally get no excessive granulations or large amount of scar tissue.

5. Bacterins save time, labor and antiseptics in the treatment of infected wounds.

6. On account of the increased resistance of the animal's system they are bound to be a factor in the future as an immunizing and curative agent for many of the contagious diseases of animals.

In this work I wish to give credit to Dr. Alexander Plummer, Veterinarian, 4th United States Cavalry, who is stationed with me at the Mounted Service School at Fort Riley, Kansas, and has been my co-worker during the time that this work was carried on; also to Dr. A. T. Kinsley, who has cheerfully aided us at all times upon matters pertaining to this subject.

IMPORTANT NOTICE TO SECRETARIES OF VETERINARY ASSOCIATIONS.—The REVIEW has for years given up a page of its space for the posting of notices of dates and places of meetings, but cannot post said notices unless secretaries will furnish them.

Please give this your *immediate attention*—if you desire the co-operation of the REVIEW in getting out a *full attendance at your next meeting*.

THE little instrument devised by Dr. J. H. Blattenburg, of Lima, Ohio, which has proven to be such a material aid in the "Williams" operation for roaring, as demonstrated at the national convention at Toronto in August, and at the meeting of the New York State Veterinary Medical Society at Brooklyn in September, has aroused considerable interest among veterinarians throughout the country, who seem to think that through the assistance of this little instrument, the operation is likely to be performed by a great many practitioners who have thought it too difficult for them to undertake before the advent of Dr. Blattenburg's "burr," which has simplified the technique. Consequently Dr. Blattenburg has been flooded with letters of inquiry in regard to the instrument—cost, where to procure it, etc., and the doctor desires to say to the profession through the medium of the REVIEW that he has no intention of manufacturing the instrument, now or at any other time, but that if it receives the stamp of approval of the profession and is considered as one of the necessary instruments for the performance of the "Williams" operation for roaring in the best and most expeditious manner, it will, no doubt, be placed on the market by one of the veterinary instrument houses in the near future.

NEWER THERAPEUTIC AGENTS.*

BY PIERRE A. FISH, ITHACA, N. Y.

Until the matter is investigated, it is difficult to conceive how much work is being done in the production of new remedies. According to *Merck's Report* the number of new remedies appearing in 1906 was 96; in 1907, 85; in 1909, 67; in 1910, 75. For the four years mentioned the average would be about 80 per year. This means the appearance of six or seven new remedies each month.

Occasionally a new remedy is of importance and acquires permanent use. The majority at the same or greater cost, are no more, and perhaps even less efficient than the established remedies and are therefore soon forgotten. In many instances the basis of a number of new remedies is the same substance in combination with different substances, but with a new or modified name for each compound. Some of the basal substances thus used for new compounds are: formaldehyde, salicylic, citric, acetic and tannic acids; arsenic, quinine and various others. Thus many of the new remedies are old ones disguised under various combinations.

The greater number of new remedies originate in foreign countries and may have come into more or less general use there before being taken up in this country. Although the great majority of these remedies are intended for human practice some of them are equally practicable for veterinary use. Others equally practicable but higher in cost are prohibitive on that account because of the larger dosage required for the domesticated animals.

Although the title of this paper refers to newer therapeutic agents, it is believed that an occasional reference to a new thera-

* Read at the Forty-eighth Annual Convention of the American Veterinary Medical Association, Toronto, Can., August, 1911.

peutic use of an old drug is equally interesting and important and a few such will therefore be included.

Acetone-Alcohol.—This preparation is used to disinfect the skin before operation. Equal parts of acetone and 95 per cent. alcohol are used, or in some cases, one part of acetone and two of alcohol. This mixture removes the bacteria on the surface. The area is then rubbed over with dilute tincture of benzoin to safeguard against the deep-seated bacteria. The action of the mixture depends in part upon the alcohol, but the action is converted into a durable one by the acetone, which is a powerful solvent of fats. Acetone is superior to ether, benzine, etc., because it has greater power of extracting water.

Acidum Nucleinicum (obtained from yeast).—V. Milulicz and Miyake have drawn attention to the fact that nucleinic acid is a valuable therapeutic agent especially in laparotomies. Subcutaneous injections apparently have the property of increasing the resistance of the peritoneum to bacteria. It increases leucocytosis considerably and raises twenty-fold the resisting power of the peritoneum. For this purpose a 2 per cent. neutralized solution is injected 12 hours before the operation. Solutions of sodium nucleinate give the same results. According to Pollak nuclein has the same action as nucleinic acid.

Afermol is the name applied to the dry and powdered serum obtained from the blood of the horse. It has been recommended as a dusting powder in purulent wounds.

Bacterins or Bacterial Vaccines.—Although quite recent, bacterins have come into quite extended use. They consist of suspensions of killed pathogenic bacteria in normal saline solution, standardized by determining the number of bacteria per cubic centimeter of suspension. The term bacterin has been proposed to replace bacterial vaccine as it is believed by some that vaccine more properly refers to virus derived from the bovines.

By the use of bacterins the opsonins and other antibodies in the blood may be increased and, other things being equal, this increase is characterized clinically by improvement in the patient's condition. When a bacterin is injected into the tissues of a

patient suffering from an infection of the corresponding live germ, the formation of the special opsonin having the power of preparing that germ for phagocytosis is stimulated. The blood and lymph thus enriched, circulating through the focus of infection, prepare the invading germ for destruction by the phagocytes. Bacterial therapy is therefore dependent upon the injection of an appropriate bacterin and the flushing of the focus of invasion by the enriched blood and lymph.

Bacterins are prepared either from germs cultivated in the laboratory, or directly from germs isolated from the patient. In the former case they are known as stock bacterins; in the latter as autogenous bacterins. It is reported that stock bacterins have been found equal to and sometimes superior to autogenous vaccines in the treatment of certain infections.

Basedowsan.—Although not used in veterinary practice this agent is referred to because it is obtained from domesticated animals. It is a serum obtained from the blood of goats and sheep from which the thyroid gland has been extirpated. It contains 0.5 per cent. of carbolic acid as a preservative, and is used in Basedow's disease (exophthalmic goiter, internally and by hypodermic injection.

Camphora.—Very favorable results are reported in veterinary practice by Becker concerning the use of camphor in the treatment of purpura hemorrhagica (morbus maculosus). In addition to local treatment, pills were prescribed consisting of 75 grains of camphor, 1 2-3 oz. of common salt and the required amount of flour and water. In three severe cases it was found that three pills a day proved sufficient to cause the swelling to subside after a few days and to increase the desire for food.

Chromii Sulphas.—Kolpinski has pointed out the therapeutic value of this drug. It is said that it appears to be more useful in conditions in which there is fibrosis or degeneration of tissue, secondary to changes in the spinal cord. It is assumed that it affects the trophic centers of the body—those which regulate the nutrition of nerves and through them the various vital

organs. In human practice it is recommended in neurasthenia, locomotor ataxia, exophthalmic goiter, enlarged prostate, chronic nephritis, impotency, chorea migraine, sciatica and uterine fibroid. It is apparently a non-toxic preparation and may therefore be given in rather large doses. Its action would seem to class it with the alteratives, as its effects are gradual and treatment should extend over some little time, although some rather prompt results are reported. It would seem to be indicated especially in chorea in the dog and it doubtless will be found to have other applications in veterinary practice.

Cocainae Hydrochloridum.—Although this agent has long been used for the production of local anæsthesia, C. Ritter has shown that intravenous injections of cocaine hydrochloride in the dog gave rise to total anæsthesia. With small dogs he used about 10 c.c. of a 1 per cent. solution and with large dogs 5 c.c. of a 3 per cent. to 5 per cent. solution in 0.10 per cent. normal saline solution. The dog remains fully awake, moves his eyes and head; the eyes are open and react to the slightest stimulus. The pupils are dilated. The respiration becomes quiet, regular and usually slightly accelerated. Sensibility to pain disappears after two to five minutes. While an animal that has not been cocainized suffers great pain from the application of a clamp or the contact of a thermocautery, the cocainized animal does not react to these stimuli except that perhaps a single contraction of the muscles may be observed. The duration of the anæsthesia is variable, in some cases it lasts only fifteen minutes, in others half an hour or more.

Weaker solutions abolish the susceptibility to pain but the sensibility to touch is retained. In a few cases only were unpleasant secondary results observed. It was found that on repeated cocainization the cocaine action lost its intensity.

Cupri Sulphas.—The fact that copper sulphate acts unfavorably upon the lower fungi and algæ has led to its therapeutic use in actinomycosis. Bevan obtained very satisfactory results from its internal and external use in a case of actinomycosis of the abdominal cavity. In this case neither operation nor potas-

sium iodide, nor the use of radium, had proved of any material benefit.

Echinacea Augustifolia.—In some sections this drug has come into quite extensive use in veterinary practice. It is reported that its use in some apparently hopeless cases in horses and cattle has been attended with successful results. It is a non-toxic drug—as much as four ounces of the powder have been administered to a cow in single doses. It is especially indicated where the quality of the blood is not up to the proper standard and in some ways may be classed with the alteratives as to its action.

Fibrolysin.—This is a sterilized 15 per cent. solution of a double salt of *thiosinamine* (two molecules) and *sodium salicylate* (one molecule), introduced by F. Mendel as a succedaneum to thiosinamin, hypodermically. Kratzer reported a favorable result from the use of fibrolysin in a horse suffering from tendonitis fibrosa. This led to further trials in veterinary practice. Rahne used fibrolysin in an apparently hopeless case of sclerosis in a horse. According to his report five subcutaneous injections applied within eleven days led to a surprisingly good result. The horse was cured except for a slight thickening of the flexor tendons of the hock and was completely restored to its working capacity. Train in two particular cases was able to cure horses after two injections. In tumor fibrosus in an ox, three injections were found to have an excellent action. Remarkable results from the use of fibrolysin in tendonitis fibrosa, tenosynovitis and elephantiasis are reported by Oppenheim, Joehnk and Gottschalk. The doses for horses and cattle are 10 c.c. (or an ampulla containing 11.5 c.c.) into the neck of the animal. The injections are best given subcutaneously every two days. Intravenous and intramuscular injections may also be used.

Formaldehyde.—H. Lomas used formaldehyde in veterinary practice in the form of intravenous injections. In horses with hemorrhagic rash he gave single doses of 3 drams of formaldehyde (40 per cent.) diluted with $\frac{2}{3}$ to $2\frac{1}{2}$ ounces of water. In the cases thus treated recovery took place without unfavorable results.

Gallogen.—Under the name of gallogen, ellagic acid was issued a few years ago for therapeutic use. It is a by-product of the manufacture of gallic acid and contains tannin.

Kunneman used the preparation with success in domestic animals, especially in the contagious diarrhoea of dogs, in which a single dose usually produced marked improvement, and three or four doses cured the trouble. As a suitable dose for dogs and cats the author recommends 8 to 30 grains, for medium-sized domestic animals 75 to 225 grains, and for large domestic animals $\frac{1}{2}$ to 1 ounce.

Holdenin Sulphate.—Holdenin or its sulphate was first prepared by Leger. It has been stated that when given in mixtures or subcutaneously it acts as a cardiac tonic by diminishing the systolic energy of the heart. It has also been found of good service in entero-colitis, dysentery, gastric stasis and hypersecretion.

Horsine is a fanciful name given to a muscle plasm or juice from the horse. It is said to be exploited in France as a remedy for use in tuberculosis.

Iodipin.—This is an iodine addition product of the fatty acids of sesame oil. Diffine tried iodipin (25 per cent.) in three cases of severe traumatic tetanus in horses. He began by giving subcutaneous injections of 1 $\frac{1}{3}$ ounces every three days. After three of these injections improvement set in; he then injected $\frac{5}{6}$ ounce every fifth day and later every eighth day, until a complete cure was obtained after four to five weeks. In purpura hemorrhagica he obtained better and more rapid results with iodipin than with any other remedy. Iodipin was found to be useful also in broken wind of horses, parenchymatous inflammation of the udders of cows, actinomycosis and severe glanders. Additional reports give as indications for iodipin: acute endocarditis, asthma, influenza, pneumonia, bronchitis, hemoglobinemia, cirrhosis of the liver, hepatic staggers, lumbago, distemper, tuberculosis, galls, cellulitis, abscesses, extravasation of lymph, painful external swellings, malleanders, boils, tinea tonsurans, as well as external injuries and wounds.

Regarding the dosage and method of applying iodipin for veterinary purposes, the 10 per cent. preparation is more suitable for small animals, but this, as well as the 25 per cent. iodipin are recommended for internal administration (1 to 3 tablespoonfuls a day). Of the 10 per cent. preparation 1 to 5 teaspoonfuls should be given daily, according to the size and weight of the animal. This does not cause any loss of appetite or any disturbance of digestion. The preparation is well tolerated and sign of iodism are practically never seen.

For subcutaneous injection only the 25 per cent. preparation should be used. Fifty grams (1 p/3 ounce) may be injected at a time into the subcutaneous cellular tissue. The preparation is said to be harmless and not much caution is required as regards dosage. Iodipin should be warmed before use by dipping the original bottle into hot water.

Perhydrol.—This is a 30 per cent. (by weight) solution of hydrogen peroxide. It is said to be chemically pure and free from acidity. These factors are believed to increase its harmlessness and to facilitate the general use of the preparation.

Zimmerman, Porcher, Guenther and Holzmayer have reported excellent results with perhydrol as an antiseptic for wounds in veterinary practice. Not only recent cuts, tears, pricks and bites but also more or less neglected wounds may be thoroughly cleansed in a few minutes by means of a solution of 3 per cent. perhydrol. It has a particularly beneficial action in suppurating and gangrenous processes; the mechanical effect of the evolution of oxygen is a decided aid to its action. In otitis externa in the dog it is recommended in 10 per cent. to 30 per cent. solution. Moist eczema may be treated with pure perhydrol or with perhydrol glycerine. It is also recommended in stomatitis and ulcerative stomatitis of dogs and horses. As an eye wash, in a 0.5 per cent. to 1 per cent. solution, perhydrol is recommended in traumatic corneal ulcer, conjunctivitis and capillary hemorrhage. Internally, Holzmayer gave it to a dog with distemper (1 tablespoonful of a 1 per cent. solution every two hours) with very good effect. Oppenheim has suggested that if applied as soon

as possible to dog bites, either by itself or with potassium permanganate, it would free the wound from virus and so prevent an outbreak of rabies.

Radium.—In the AMERICAN VETERINARY REVIEW, Dr. Liautard has called attention to some interesting experiments by Dr. G. Petit on the injection of radium sulphate in the jugular vein of an aged but healthy horse. The dose administered was 1 milligram ($1/67$ grain). About eight months later a similar dose was administered. The radium was in an insoluble form and was suspended in 250 c.c. of physiological serum. The effect was harmless. A certain proportion of the radium was eliminated from the body, but an examination six months later showed that there was still some radium in the body. A favorable effect was noted upon the nutrition and general condition. The weight increased from 380 to 410 kilograms (836 to 902 pounds), although it is possible that other factors may have contributed to this. The number of red corpuscles was also increased. It was believed that the injection of this insoluble salt of radium imparted a permanent radio-activity to the blood and therefore to the whole organism. In addition to the emanations from the blood, it was believed that emanations also occurred from particles of radium fixed in the tissues, especially the lungs, and that the continued emanation exerted an effect upon the tissues—in this case a beneficial one. That the serum from an animal thus made radio-active may have therapeutic uses is a possibility. Further research and reports will be awaited with interest.

Radio-active muds have also been experimented with for therapeutic use. They have a very complex composition and appear as a soft reddish paste of the consistency of butter or soft clay. They may be applied as plasters or suspended in water and used as baths, either general or local. The experiments thus far indicate that they are of therapeutic use in eczema in dogs; in dynamic conditions and to promote convalescence. In horses, used either as baths or local application, the muds have been tried in arthritic conditions, sprains, lymphangitis, common scratches,

etc. The use of radium in veterinary practice is new and additional information will be welcomed.

Serum Leucocygenic (Raymond Petit).—This preparation is described as a horse serum subjected to a certain treatment to render it stable, introduced by the Pasteur Institute at Paris and marketed in liquid as well as in powder form. It is maintained that injections of the serum cause a great migration of leucocytes to the site of injection. The leucocytes oppose the entrance of microbes by virtue of the phagocytosis they produce. This action is made use of in removing the pus foci in markedly infected wounds and the like. According to Dellet, the serum in certain diseases brings about a disappearance of the general symptoms of infection, reduces temperature, slows the pulse, heals up the wounds and often wards off a fatal termination.

Yohimbine.—This alkaloid is recommended as an aphrodisiac and as a remedy for impotence. Strubell's experiments show that the cause of the action of yohimbine is to be found in the increased metabolism of the central nervous system. This increased activity in the exhausted nerve centers has the effect of stimulating the potency which remains, supposing some part of the tissues of the center for erection to remain functional.

Daels ascertained that in sexually mature animals rut is not only called forth by yohimbine, but may be increased to a hemorrhagic discharge, and that these appearances are not abolished by ovariectomy. This action is not obtained with animals which are not sexually mature or with those which have foaled within the month. Holterbach reports a case of a cow, rendered sterile by chronic metritis which was cured by the administration of yohimbine.

The doses are: for the horse, 5/6 grain, thrice daily; bulls, 1¼ grains, thrice daily; cows, 1½ grains, thrice daily; man, 1/12 grain, three or four times a day.

TWO HUNDRED AND FORTY-SEVEN new members were added to the American Veterinary Medical Association at the Toronto meeting; coming from thirty-four States, the District of Columbia, and six Canadian Provinces.

THE SIGNIFICANCE OF MEAT INSPECTION TO THE PUBLIC AT LARGE.

BY F. R. COMBER, B.A., M.D.C., FORT ATKINSON, WIS.

There is no more vital question confronting the American people of to-day than the significance of meat inspection to the people at large.

Are you not impressed with the magnitude of it, when you are told that, according to government statistics, about fourteen billion pounds of meat was consumed in the United States last year; in other words, about 186 pounds per capita?

It is calculated that meat constitutes about 30 per cent. of the total nutritive material and costs about 30 per cent. of the total food ration.

Meat animals are subject to many diseases which impair or destroy the wholesomeness of their meat for human food; but the presence or the effects of disease are not always discernible in the dressed carcass.

A piece of meat may carry the micro-organisms of a dangerous disease without giving any indication of the fact to the consumer.

To detect disease there should be an expert inspection at the time of slaughter.

To protect the people at a point where they are unable to protect themselves is, generally speaking, the object of Federal meat inspection.

Diseased meat is the direct cause of disease in those who eat it. The consumer being unable to determine whether or not the meat he purchases is diseased demands that he be protected by the Government.

Since the time of Moses the necessity of an official meat inspection has been recognized, and meat inspection legislation has more or less kept abreast of increasing knowledge in the domain of veterinary medicine that sanitarians demand, and is the most stringent and far-reaching of existing laws on the subject.

The law of June 30, 1906, provides for an annual appropriation of \$3,000,000 to pay the cost of inspection; this enables the Department to greatly extend and strengthen the meat inspection service.

The law applies only to cattle, sheep, swine and goats and to the carcasses and meat products of these animals. Meat inspection under this law proceeds by logical steps. Meats and meat food products, except those from farmers, retail butchers and retail dealers, cannot be shipped from one state to another or abroad unless they bear the official meat inspection marks.

A person or firm desiring to make shipments must therefore make application to the Department for inspection, stating the extent and character of the business to be done. The Department, as directed by law, sends its experts in sanitation who make their report to the Washington office.

Now, in regard to post-mortem inspection. At the first exposure of the lymph glands when the head is severed they are cut into, as these are the common seat of tubercular infection.

Another inspector stands at the elbow of the trough and as the viscera are revealed watches with practiced eye for anything abnormal; carefully examining and handling the various parts, in order that any obscure indication of disease may be discovered.

The Bureau of Animal Industry requires this inspector to handle the viscera, and, if necessary, cut into them. This is rapid and exacting work in the large slaughter houses and when the inspector finds a suspicious carcass he places a tag on it bearing the words "U. S. retained." This goes to the retaining room for a thorough examination by the final inspector.

If the final inspector finds the carcass is fit for food he takes off the "U. S. retained" tag and stamps the carcass "U. S. inspected and passed."

If the carcass is found unfit for food it is tagged "U. S. inspected and condemned." This goes to a tank which is provided by each house for all condemned carcasses. About 25 per cent. of the carcasses that are retained are tanked.

After the carcasses have been removed from the retaining room the walls and floors are disinfected in order that the room may be free from disease infection for the next batch of retained carcasses.

Returning to the killing floor the carcasses which are found healthy are stamped "U. S. inspected and passed," with the number of the house, so that any carcass may be traced back to the house it came from.

The sides now pass to a chill room held at 36 degrees Fahrenheit for forty-eight hours or more before being further dealt with. The head, tail, caul and liver are removed to other parts of the house; and, in fact, everything is made use of but the squeal in hogs.

Some explanation is necessary in reference to the word disease as it is used in meat inspection; as it differs from the generally accepted idea. To the popular mind the thought of eating meat of a slightly diseased animal is abhorrent. Yet it may be stated on the most eminent medical authority that not a single animal used for food in any part of the world would, upon microscopic examination be shown to be absolutely free from all infection and lesion.

From the standpoint of meat inspection, however, the meat of a great majority of animals is not considered diseased. Some slight infections are common to food producing animals, but there is no proof that they do in the remotest degree depreciate the value of the meat, or that the infection is transmitted to man.

For instance, a tubercular nodule may be located in the lungs or some other organ; such nodule would make the

particular point infected diseased, but from the standpoint of meat inspection the carcass would not be considered diseased but only the part.

It follows that the inspector in judging whether the carcass is diseased or not does so on the general principles of pathology and bacteriology and not on any exaggerated or sentimental idea.

The following is a list of the diseases for which animals are condemned: Anthrax, black leg, hemorrhagic septemia, pyemia, rabies, tetanus, hog cholera and swine plague when generalized, actinomycosis or lumpy jaw when generalized, tuberculosis when generalized.

All emaciated animals and carcasses of animals too immature to produce good, wholesome meat; in other words, anything under three weeks of age shall be condemned. All animals that are in a dying condition in abattoir pens and all that have been allowed to pass into the scalding vat alive shall be condemned.

Now, in regard to tanking condemned meat. The law orders the Secretary of Agriculture to destroy all carcasses which are found unfit for food. All large establishments provide tanks for this purpose, as in this way the grease may be saved for soap and the remainder for fertilizer.

Tanks vary in size with the size of the establishment and the volume of business done. The tanks are of metal and extend through two or more floors of the house. From the nature of their usage they must of necessity be very strong and tight.

Government inspectors first seal the lower opening of the tank; they then see that condemned carcasses with the refuse are put into it, and then the inspector closes and seals the draw of valves. Steam is then turned into the tank and the Government requires that it be maintained at a certain pressure for a prescribed time. A temperature of 280 degrees Fahrenheit is maintained for ten hours, which is sufficient to liberate all the grease and even to disintegrate the bones.

Inspectors watch the drawing off process, which is done by means of valves located at intervals along the sides of the tank, and all containers in which the product is stored is marked inedible.

All possible precautions are made to prevent this product from being sold as lard.

A word in regard to the Federal meat inspectors. The men in charge of all stations where slaughtering is done are veterinarians. These men must first have completed a three years' course in a reputable veterinary college. The Bureau of Animal Industry recognizes only fourteen such institutions in the United States, and there are several others who aspire to cover this field of knowledge. The Civil Service Commission examines these graduates and about 50 per cent. of those examined make the required grade.

When admitted to the service an inspector is placed on probation for six months. If at the end of this time he attains his permanent appointment he is placed under experienced inspectors that he may learn the regulations and methods of their application.

The Department demands all the inspector's time during the working day and a man must be slow, indeed, if in the days, months and years spent amid the swift work of the killing floors he fails to develop the most masterly dexterity in discovering abnormalities in the carcasses that come before him.

The laboratory inspectors constitute another class of employees; they are selected through civil service examination in the principles of bacteriology and chemistry with special application to meats and meat food products. Indeed, it is hoped that the foregoing description of the operation of the Federal meat inspection law has shown its limitations and the consequent necessity that it be supplemented by state and municipal inspection.

It may with reason be supposed that the local slaughter house needs inspection even more so than the small plants now under Federal supervision. Again, if the butcher happens to be

located in a town where inspected houses are situated or near such town or city it is not unreasonable to suppose that sellers having suspicious looking animals will send them to him rather than to the inspected houses where they must run the gauntlet of expert examination and at the risk of reaching the offal tank.

Now, in regard to meat inspection in European countries. In England it is an offense punishable by law to sell unwholesome meat, knowing it to be such. In general they employ medical officers of health to examine at any reasonable time any carcass or meat on sale for human food. If such carcass is found to be diseased it may be brought before a justice, who may order it destroyed.

Now, in regard to Scotland. The Scotch public health act is more specific, for it provides for inspection by veterinarians, both ante-mortem and post-mortem inspection; and inasmuch as that country is well supplied with public abattoirs under municipal ownership and control the meat inspection system of that country more nearly approaches our own, although without our system of marking.

In France the meat inspection service at present is under the supervision of the Minister of Agriculture.

The municipal authorities also issue special regulations which have as their object the total or partial seizure of unwholesome meats or the exclusion from abattoirs of animals unfit for food.

Inspection in private abattoirs or slaughtering houses is not practiced generally in France, only four departments having made any efforts in this direction, and in these it does not come up to the standard maintained in public abattoirs.

Now in regard to Germany. Of all the meat inspection systems of European countries, Germany is the most elaborate, and it is sufficient to say in describing it that the system very closely resembles our own in the way it is operated.

In Germany the tuberculin test shows 15 to 25 per cent. of the cattle to be tuberculous; in this country from 3 to 8 per cent. of the cattle are infected according to government statistics.

The wide variation in the figures in both cases is due to the fact that different localities are differently affected.

In the United States the older and more thickly populated portions are the most affected.

Tuberculosis among cattle running wild on extensive prairies is rare, but when the animals are kept in barns, crowded and subjected to stable feeding, it becomes very common.

It reaches its highest percentage among milch cows, which are often kept under the most unnatural and unhygienic conditions.

There are cases on record where from 50 to 80 per cent. of a herd of milch cows have been found affected.

Now, in conclusion, to provide clean, healthful, wholesome meat for the rich and poor alike, is one of the problems of our modern civilization.

Would that we could raise the standard of education and investigation along these lines to a higher plane, and spend more money in the interest of science, whereby we could extend the average length of life many years.

Then do you not one and all come to the logical conclusion that federal meat inspection is of vital importance, and to do the greatest good for the largest number for the longest time is what the government is aiming at, and it is a cause which merits the co-operation of us all.

And let us ever remember, as did the far-famed men of letters:

That the tissue of life to be
We weave with colors all our own
And in the field of destiny
We reap as we have sown.

It is frequently said that "veterinary medicine is in its infancy." Anyone peeping into Steeplechase Park, Coney Island, on the evening of September 14, might be excused if they applied the same to veterinarians.

THE PLACE OF PATHOLOGY IN THE VETERINARY CURRICULUM.*

BY SAMUEL HOWARD BURNETT, NEW YORK STATE VETERINARY COLLEGE,
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The relation of the several subjects forming the veterinary curriculum is a topic that is exciting more thought each year. It is not to be expected that we are ready to agree as to how much time shall be devoted to each subject. This probably will always be a debatable question. But thoughtful study and discussion of the matter cannot fail to exert a powerful influence in our teaching and bear fruit as time goes on. As a result, more efficient and capable veterinarians will each year be leaving the schools and entering the active practice of their profession. I do not think that this association should determine just how much time should be given to each subject taught, even if we could all agree. That must be decided by the faculty of each college. It is a domestic problem, as it were. But it is proper and fitting that this association consider the correlation and the proportional value of the subjects taught. This is the place to discuss and to determine these. It may be that each person here would feel some diffidence about telling a colleague in a faculty meeting that his subject was not of sufficient value to justify the time given it; but here a discussion would be entirely impersonal. It is easy to separate the subjects taught from the men who teach them. After the proportional value of the several subjects is determined, it will be comparatively easy for any faculty to decide how much time shall be devoted to each.

It is not my expectation to give the solution of this large problem. I propose to discuss one part of it. The discussion

* Presented at the Association of Faculties and Examining Boards, Toronto, August 24, 1911.

must necessarily involve the entire subject to a certain extent. If it should be of help to anyone to clear his thoughts, whether in agreement with mine or not, it will be a distinct advantage and the trouble of preparing this paper fully repaid. The topic I wish to discuss is the place pathology has in the educational scheme, but before taking that up it is necessary to consider in general the subjects taught and the order in which these should be presented.

The veterinary curriculum is composed of subjects that do not have exactly the same status nor are they of equal importance. Physics, chemistry and biology are preparatory sciences. Anatomy, physiology, pharmacology and pathology may be considered the fundamental sciences proper. Finally, there are the applied subjects, medicine, surgery and therapeutics. It is important to bear in mind that these three subjects are not sciences. The science in surgery is the anatomy and pathology involved. In medicine it is physiology and pathology; in therapeutics it is pharmacology and pathology.

These subjects, medicine, surgery and therapeutics, are supported by an arch, whose more important stones are anatomy, physiology, pharmacology and pathology. Of this supporting arch pathology is the keystone. When I said that all the subjects in the curriculum are not of equal importance, I did not mean that certain of the subjects are unimportant. For example, physics is generally considered one of the lesser subjects. It is not so important as physiology; but what kind of a veterinarian do you suppose a man would make who has no knowledge of physics? So with chemistry. Both are indispensable subjects, yet neither is so important as physiology or anatomy.

Chemistry should be a much more valuable subject than it is. Perhaps in the not distant future we shall know more of the chemical changes that are taking place in the animal body. When we do, chemistry will be entitled to a larger share of time than it now deserves.

Anatomy is acknowledged to be one of the more important subjects. If we judge by the time devoted to it, it must be con-

sidered the most important subject a veterinary student has to study. A surgeon needs a very definite knowledge of anatomy. A physician needs a general knowledge of the structure of the body and somewhat more definite knowledge of certain parts; for example, the internal organs. Whether a detailed knowledge of every bone, muscle, vein and artery is usable knowledge for a physician I have grave doubts. I do not know exactly what proportion of the average practitioner's cases are surgical; rather small, I should say. What the physician needs is not so much to have details of anatomical structure as a thorough knowledge of the function and action of the several parts of the body. Physiology is a much more valuable subject to him. Did you ever think why it is that an experienced man is a better practitioner than one newly graduated? Is it not in large measure that in getting experience, as we say, he has been adding to his working knowledge of physiology and physiological pathology? The student devotes about one-half the time to physiology that he does to anatomy. I hope no one will think that I advocate giving at once more time to the study of physiology than to that of anatomy. Though one subject may be more important than another, it does not necessarily follow that it should have more time devoted to it. Other things being equal, the more important subject should have more time given it. Not so much is known of physiology as of anatomy. Physiology is a much more difficult subject to teach and is in many cases not so well taught as anatomy. There are many things to take into consideration in deciding how much time should be given a subject.

Another matter only less difficult to determine is what shall be presented in any one subject. Every subject taught is so large that it cannot all be given to general students. Every teacher has to decide what he is going to teach his students and what he will omit. What to omit is one of the most trying problems a teacher has to solve. I would rather train a student to be a pathologist than teach a general student. A teacher has to keep in mind constantly, "Am I training these students to

be general practitioners, or am I training them to be specialists in my subject?"

Not only do teachers need discriminating judgment in this respect, but members of examining boards should use the same care. Examining boards have a good deal of influence in determining what shall be taught in any subject. It seems that an important reason for the existence of an examining board is that it serve to restrain instruction given in the colleges and keep it within the bounds of the practical. An examiner should be just as careful as a teacher not to throw emphasis on the unimportant things. He is not examining specialists in his subject, but is to find out whether the candidate has a knowledge of the subject that a general practitioner should have. Anatomy especially suffers from having emphasis placed on the wrong things. In nearly every state board or civil service examination one may find examples of questions that should not be asked. For example, do you think the ductus arteriosus and the foramen ovale need to be emphasized? In another recent examination one question in pathology was to name the varieties of carcinoma. In teaching carcinoma to my classes I had considered that it was less important for them to learn the names of the varieties than to study other things which otherwise must be omitted. On account of lack of time many things were omitted that I consider of much greater importance than the varieties of cancer.

A veterinarian is not different from anyone else. His brain cannot carry an unlimited number of facts. To have a student learn and keep in readiness for instant use a mass of facts that he will never need is entirely wrong. Of course much must be taught in giving a student a comprehensive knowledge of the subject that he will have no occasion to use directly. For example, in teaching carcinoma one necessarily has to teach the several kinds; but it is not necessary that a student keep the names of these varieties in his mind ready for instant use.

The order in which subjects shall be taught is comparatively a simple matter. Pathology deals with more or less changed

normal structure and function. The normal structures and functions are taught in anatomy and physiology. These subjects must precede pathology. Chemistry must precede pharmacology. Pharmacology and pathology must precede therapeutics. General pathology must be studied and completed before physical diagnosis, general surgery or medicine are begun. It is a great mistake for a student to be given pathological terms before he learns what they mean. He is certain to get either a wholly inadequate idea or even a wrong conception of them. It is worse than wasting a student's time. He has to unlearn something that he has already learned. Pus and inflammation, for example, are very difficult for a student to understand unless they are first presented in the laboratory. A student should not be allowed in the surgical clinic before he has completed general surgery, nor in the medical clinic until he has had physical diagnosis.

The order in which subjects must be taught is therefore pretty definitely fixed. Pathology has to come in the middle and latter parts of the course. With a course of only three years it is necessary to begin general pathology before anatomy and physiology are completed.

In general pathology the student learns the meaning of the processes and conditions with which he is to deal. It is not learning words and terms, but the meaning of these, what the conditions and processes are. Unless he knows what the pathological changes are, it is useless for a student to try to get a knowledge of medicine or surgery. He may be taught to repeat words, parrot-like; but his ideas cannot be clear. He cannot understand. If the future veterinarian is to deal intelligently with disease, he must first know what the pathological conditions are. This is not an easy matter. There is no royal road to acquire this knowledge. I am aware that in a recent pathology the claim is made to present the subject in words of one syllable, as it were, so that anyone can readily grasp it. This is a wrong conception of what general pathology is. The difficulty is not in learning the words. By the time the process or condition is understood by the student the name of it will be

learned. When it comes to the state that words are made to take the place of that for which they stand, something is radically wrong. Teachers of other subjects besides pathology need constantly to bear this truth in mind.

Pathology is not merely the gateway through which the student enters the field of his profession. It is a very important subject in itself. It is the subject one uses in making a diagnosis. This alone would be sufficient to give it a very high rank. The ability to make a diagnosis, to know what is taking place in the patient, is what distinguishes the skilled veterinarian from the quack.

A part of the pathology taught students by the departments of pathology in veterinary colleges is preparatory and explanatory to that taught in other departments, medicine, surgery and therapeutics. When a veterinarian is dealing with a case of a well-known disease or condition, he uses what he learned in medicine; but when he has something obscure, something not described in works on medicine, he must go back to general principles, that is, general pathology. Pathology deserves a goodly amount of time—much more than is given to it.

There is one part of pathology that receives little or no formal recognition, but which should be taught as a separate subject. I refer to physiological pathology. Pathological conditions are manifest by changed structure and deranged function. Of these the deranged function is usually the more important to a physician. He has to depend largely upon symptoms, the marks of the deranged function. With a four-year course, such a subject could profitably be added to the last year. With only three years, there seems no time to add another subject to the already overcrowded curriculum. Something could be done by allowing more time to special pathology or post-mortem examinations. It does not seem wise to add much physiological pathology at the expense of instruction in morbid anatomy. Too little time is now given to that. The importance of the subject demands that pathology be given a much larger place in the curriculum than it has in any of our colleges. Here

is what an eminent veterinarian* has said as to the importance of pathology: "This field (*i. e.*, pathology) is the most important within the whole domain of the veterinary sciences; it is the one upon which the most typical and most important of our veterinary work pivots."

In conclusion, let me repeat the points that I have attempted to make. Thoughtful study should be given the correlation of subjects in the veterinary curriculum. The proportional value of each subject should be determined. Each subject must be considered not for its own sake, but as to what part of it is needed in the education of a general practitioner. The training of a specialist in any subject is a different matter. Both teachers and members of examining boards should carefully distinguish between what a specialist should know and what a general practitioner may be required to know of any subject. After the minimum of time each subject demands is allotted, what time remains should be given the particular subjects that will give the most valuable training.

When the curriculum is studied, I believe we shall find that changes may profitably be made. In particular, considering its relation to other subjects, its relative importance and the invaluable training it affords, a larger place should be given to pathology. It is in truth the backbone of the curriculum.

* Dr. Leonard Pearson, Report of Committee on Intelligence and Education, Proceed. A. V. M. A., 1907, p. 91.

A PRINTER'S ERROR.—In some unaccountable way our printers inserted a line from Dr. Palmer's paper (next to last line, page 666, September issue,) between the first and second lines of the fifth news item on page 700, relative to Admiral Togo's trip to Toronto, which makes the latter read rather peculiar. Fortunately the line was duplicated and not transferred, as it would then have marred a valuable article.

THE TREATMENT OF PNEUMONIA AND PLEURISY.*

BY H. PRESTON HOSKINS, V.M.D., PHILADELPHIA, PA.

To some of you a paper on so old a subject by so young a member may seem precocious, but it is not presented with the idea that I have something radically new or startling to offer, but more with the hope that my experience in treating these diseases may be augmented by the remarks which I hope will be brought out in the discussion.

Pneumonia in the horse has not the terrors of the same malady in the human family. Why this is a fact has never been satisfactorily explained to me. The very fact that we do not regard a case of pneumonia anywhere near so seriously as does the practitioner of human medicine, may account for the small amount of study and research work done by veterinarians with relation to the treatment of pneumonia.

Our most difficult cases of pneumonia are those that come as a sequel or complication of influenza, or shipping fever, seen mostly in the large, plethoric Western horses of draft type. In a large percentage of the cases, the pneumonic process is accompanied by more or less pleurisy. These cases too frequently take on a highly virulent form, the prognosis being anything but favorable, right from the beginning. They fail to respond to the most vigorous treatment and die with alarming regularity.

The treatment of pneumonia and pleurisy must be taken up from a number of standpoints. For convenience we will take up the following subjects: Environment, diet, local applications, and general therapeutics.

The very nature of pneumonia makes it necessary to have the environment the best possible, with regards to light, air, tem-

* Presented at the Forty-eighth Annual Convention of the American Veterinary Medical Association, Toronto, Canada, August, 1911.

perature and sanitary conditions. Sunlight is recognized as one of our best and cheapest disinfectants, and we should make use of it as much as possible. A plentiful supply of pure air is a primary requisite in the treatment of pulmonary disorders. The human practitioner avails himself of pure oxygen in his efforts to afford his patient relief, but I doubt if this is resorted to very often by his fellow practitioner in the field of veterinary medicine. French veterinarians have reported good results with its use. They give inhalations for fifteen minutes twice daily. As a result, oxidation of the blood goes on more actively, the pulse becomes stronger, but the temperature is not affected. The course of resolution goes on in a regular manner, being complete in about eight days. One thousand litres of oxygen will suffice to treat a case of pneumonia, and the cost is less than two dollars.

Recourse to oxygen is indicated when signs of asphyxia are manifest, especially in double pneumonia. Our large draft horses need plenty of pure air when in health, and for this reason special attention should be paid to ventilation when they are sick. Nothing is more harmful than inhaling a vitiated atmosphere, and special stress is put on this fact so that its importance will not be lost sight of. Avoid direct draughts on the patient, and endeavor to maintain a uniform temperature. With regards to sanitation, it is needless to say that cleanliness is of the utmost importance. The bedding should be renewed daily, feces and wet bedding removed promptly, the feed trough and water bucket scalded every day, and every effort should be made with a view of maintaining as sanitary surroundings as possible.

We will next take up the treatment with reference to diet. **On looking over records of fatal cases** it is surprising to note what an important part the appetite plays. It is almost a general rule that as long as a horse will eat, he has a chance for recovery, no matter how serious his condition. But let him get off his feed and a large proportion of his chances are lost. For this reason strict attention should be paid to the diet. It is wrong to say "Give him anything he will eat," and stop there.

The best results are obtained where the patient is cared for by one attendant, or at most, two, one during the day and one at night. The nurse should be made to know the dangerous nature of the case and what an important rôle the matter of feeding plays. Small amounts of feed at frequent intervals is much to be preferred over the usual three meals a day. Give amounts that the patient will eat with a relish, and still be a little hungry. In other words, keep his appetite on edge.

Offer him water frequently, or keep it before him constantly, changing it for fresh at least every six hours, and scalding the bucket at least once daily. Such drugs as alcohol, potash salts, etc., can be conveniently administered in the water. Tempting foods can be given in the form of scalded oats, corn on the cob, oatmeal gruel, freshly cut grass, carrots, apples, etc. Corn may be objected to for various reasons, but experience in treating sick Western horses has proved that they cannot do without it. Sometimes it is the only thing these horses will eat. They have been raised on it, and, like the Irishman and his potatoes, cannot get along without it. Milk is a valuable article of diet for two reasons. It is said to increase diuresis, and thereby decrease the number of micro-organisms in the digestive tract.

Digestion should be watched closely, and everything done to preserve the integrity of the alimentary canal, as the close relationship existing between the respiratory and digestive tracts is very marked. Secondary infection of the diseased lung can easily take place by way of the digestive tract. Digestive disturbances frequently are the forerunners of gangrenous pneumonia. A foetid diarrhoea should be looked upon as a bad symptom. Avoid constipation by the use of saline laxatives, such as artificial Carlsbad salts in the feed or water.

At times, even in health, the walls of the digestive tract appear to offer but a feeble resistance to the passage of micro-organisms. It therefore follows that this mode of infection is even more open when there is any disordered condition in the alimentary canal, and permits the passage of micro-organisms, both harmful and benign, into the system. Sometimes it is well

to flush out the mouth and rectum with mild antiseptic solutions, to still further lessen the danger of infection by the digestive tract.

When the appetite is entirely gone, we can make use of rectal feeding. We can employ the whites of eggs, boiled starch solutions, emulsions of fat, milk, etc. According to Johnes, one of the best means of coaxing back a lost appetite is washing out the mouth with fresh water.

Therapeutic agents in the treatment of pneumonia are used with the view of combating pulmonary congestion, lowering internal temperature and preventing complications.

One of the earliest forms of treatment was venesection. Some of our best practitioners still make use of it. In a great many cases when we get to our patients the time for blood-letting is past, the cases having gone beyond the congestive stage. We can employ revulsives in the form of sinapisms, but these have the disadvantage of being uncertain, and, besides, hampering the veterinarian in his subsequent physical examination of the affected parts. Strong applications of mustard are sometimes indicated for their stimulant effect, rather than for their derivative action. The Priessnitz compress is a valuable adjunct in the local treatment of diseases of the chest, when the gravity of the case or other conditions warrant its use. Cataplasms applied thick and warm sometimes give splendid results in the early stages.

Pneumonia is one of the diseases in which the treatment is largely symptomatic. It is mainly supportive, and uncomplicated cases run the usual course and recover in due time. Some European veterinarians regard digitalis as almost a specific for pneumonia. When employed in half-drachm doses of the tincture every three hours, it does its part very well in keeping up the heart action during the critical stages. The diffusible stimulants still have their admirers. In human medicine intramuscular injections of camphor have been employed with good results. It is reported that shortly after these injections the odor of camphor can be detected on the breath. Creosote and guaiacol

are two drugs that are employed with advantage in pneumonia. Being excreted by way of the lungs, they act as disinfectants for the diseased respiratory tract, which is a very important feature.

Among the therapeutic agents that we have at our command, perhaps the most recent are nuclein and antipneumococcic serum. Veterinarians are reporting that nuclein is the best biological product that has ever been placed at their command. In cases of pneumonia a dose of 10 c.c. hypodermically is recommended twice daily during the critical stages, and then once daily as long as indicated. Other treatment is usually employed, the nuclein being given only as an adjunct, but it is said to do its work well. Antipneumococcic serum has been much exploited in late years. At first glance, like most of our biological products, its price appears almost prohibitive if administered in the dosage recommended by the firms preparing it.

During the past winter so much was said of it by other practitioners that I decided to give it a trial. My first case resulted in failure, but I decided to try it again, as in the first instance I could not say that it had had a fair trial, the case having been one of traumatic pneumonia. In the second and third cases I had more satisfactory results, although both were cases of pleuro-pneumonia. Within twenty hours after the administration of the first dose all symptoms were ameliorated to a greater or less extent. The temperature dropped several degrees, the pulse became 25 per cent. to 50 per cent. stronger, the breathing less labored, and the patient somewhat brighter. Encouraged by success in these cases, I tried it again in a number of cases with varying success.

However, this fact struck me with some force, namely, that in a number of cases the serum treatment brought beautiful results, while in others the results were either mediocre or nil. Was this because the serum was made from an organism of the same strain as that causing the disease in the patients that responded to the serum treatment so markedly?

On the other hand, bacteriologists and pathologists the world over have arrived at almost uniform results in the study of the disease, whether it be croupous, catarrhal or traumatic, whether it assumes the lobar or lobular type, and whether it is isolated or epizootic.

Kyes undertook to determine whether there are specific antibodies for the pneumococcus, and has reported positive results. He used leghorn roosters for his experiments, as this fowl is relatively non-susceptible to the pneumococcus. After repeated injections of ascending doses of a suspension of the organism, the fowl was bled and the serum obtained. He found that this serum contained a substance which would neutralize or render harmless the virulent pneumococcus when injected simultaneously with, or some time after, the injection of the suspension of the pneumococcus. Some of the mice were allowed to become very sick before the serum was administered, but in every case, by pushing the serum in relatively large doses, the animals made a complete recovery.

Workers in the field of human medicine from time to time have startled the world by their announcements of the discovery of a cure for pneumonia with the aid of vaccines and sera. But no matter how great their assertions, the more conservative practitioners seem loath to accept or put any faith in their claims.

What has been said in the treatment of pneumonia, with particular reference to hygiene, will equally apply to pleurisy. Some practitioners have told me that their treatment for the two diseases varied but slightly. I can readily see how this would work out in some cases, while in the majority of them result in failure. With regard to diet, the only change would be in favor of dry foods, as the less moisture taken into the body the less there is to find its way to the pleural cavity if there is effusion. With the exception of cold water, local applications interfere with percussion and auscultation. Frequently this is of more importance in pleurisy than in pneumonia. Cataplasms of kaolin and the other similar preparations on the

market are of great advantage where there is much pain and the breathing is very labored.

Internally much dependence can be placed in digitalis for its cardiac and indirectly diuretic action. Its alkaloid, digitalin, or sparteine may be employed for the same purpose. Iodide of potash is a valuable agent in this disease, if given in full doses every six hours until physiological symptoms are observed. If the heart will stand it, a grain of arecoline daily will hasten resolution. By combining a quarter grain of strychnia with the arecoline, its depressant action on the heart may be overcome.

Fluid in the chest should be removed by surgical means, if it at all hampers the lungs or shows any tardiness in being absorbed and eliminated in other directions, or if it is purulent, which can be determined by an exploratory puncture. Usually one tapping is not sufficient, when it is resorted to at all, three or four operations being necessary, increasing the intervals between each two succeeding tapplings, as indicated by the amount of fluid obtained each time.

The injection of iodine into the thoracic cavity has been discontinued by most practitioners, it being preferable to get the effect of the iodine by the internal administration of either the iodide of potash or ammonia. If the disease runs into the chronic form of dry pleurisy, it is well to keep up the internal alterative treatment, and apply vigorous blisters to the thoracic walls over the affected areas. Usually such cases do not respond very well to treatment, but that outlined here has been of benefit in a few cases.

While waiting for the time when we will have a specific treatment for each disease, we must content ourselves with a treatment which is symptomatic, after all. It is somewhat remarkable too, when we consider how different are our views at times with reference to these diseases, and yet, when different lines of treatment are compared, in spite of their apparent variations, they are found to be quite similar in reality.

"FOOT EVIL" IN HORSES AND MULES AND "SORE MOUTH" IN DOGS.*

BY W. H. DALRYMPLE, BATON ROUGE, LA.

In the first place, I desire to offer an apology for the meagreness of the information I am able to afford regarding the conditions which I have chosen as my part of the report of the Committee on Diseases.

It has been my misfortune, if I might be permitted to put it that way, to have been quite fully occupied with duties at home requiring the greater part of my time and attention, which has prevented my being able to devote as much leisure as I could have wished to the preparation of a report worthy of such an important committee of this association. And it was at the last minute, so to speak, that I decided upon the subjects which constitute its basis.

I may be permitted to state, further, that my chief object in bringing these two conditions to the notice of the committee was more to create a discussion, with the hope of obtaining more information concerning them from some of our Southern members, who might, perchance, be present, than to offer anything new, or even definite, regarding them. The two conditions, however, seem to be confined, in a large measure, to the Southern States, and possibly, I think, the more southerly of them, but authentic literature appears to be remarkably scarce on either of them, possibly because of the fact that the attention of the authors of our standard works on pathology has not hitherto been directed to them.

"Foot-evil" is the popular name given an acute coronary dermatitis, which seems to arise, probably through a slight

* Presented in connection with Report of Committee on Diseases, at the Forty-eighth Annual Convention of the American Veterinary Medical Association, Toronto, Canada, August, 1911.

abrasion, at the posterior part of the foot, at the heel, and unless checked, continues to proceed around the coronet, after which separation takes place between the skin and the hoof, with ultimate sloughing of the latter structure.

During the progress of the condition the animal suffers intensely, and is rendered useless to the owner, temporarily, always; sometimes permanently.

I should, perhaps, have mentioned that the term "dew-poison" is sometimes given this ailment, which would suggest a season of the year when dew is abundant in the early mornings and at nights.

In wet spring or early summer seasons, the condition does not seem to be so prevalent; and it may be prevented either by keeping the animals from pasture until the dew is off the ground or by applying some oleaginous material to the coronets, pasterns, heels, etc., previous to turning them out at night to graze.

The condition appears to be local, both as to certain fields, farms and sections.

As to its true cause, I am sorry to say I am unable to offer anything at all definite. I have thought of the possibility of irritation brought about by an acrid property possessed by some variety of plant or plants dissolved out in the dew. Whether this is altogether tenable I am not prepared to say. However, the fact remains that the ailment is rarely, or never, seen under dewless conditions; or where oily or greasy substances are employed as preventives. It may be bacterial in origin, but I am not aware of any specific organism having yet been isolated.

As to therapeutics, many varieties of agents have been adopted—some reasonable, others extremely heroic from ordinary disinfectants and astringents to the most powerful counter-irritants and escharotics. As illustrations of the latter, employed usually by the laity, however, I may mention the following: Pouring boiling water in a small stream on and around the surface of the coronet; the saturation of the coronary surface with turpentine, and the latter ignited.

Some of the more reasonable and humane methods are: First of all, thorough cleansing of the part, to get rid of accumulated concretions, and leave a clean surface, and the application of iodine, either tincture or Lugol's solution. Or, a swab of cheesecloth or absorbent cotton applied around the coronet, and this kept moist with bichloride of mercury solution (about 1:500). Or, some of the mineral sulphates, either separate or combined. Some have reported favorable results from the use of an application of the impure carbonate of lead (white lead) thickly placed around the coronet.

A very useful disinfectant is a mixture of equal parts, by weight, of gum camphor and pure carbolic acid in liquid form. Each of these ingredients seems to deprive the other of its irritating effect.

I should like to crave a moment's indulgence to say a word regarding this particular mixture, which we may call for the present "campho-phenique," as this name suggests its ingredients.

It was first called to my attention by Dr. Wm. Perrin Nicholson, Dean of the then Southern Medical College at Atlanta, Ga., who seems to have been the first to observe the difference in the effect of the combination as against that of either of the ingredients in separate form. Dr. Nicholson experimented with it for quite a time, chiefly on himself, and afterwards made it the subject of a paper which he presented at a meeting of the Tri-State Medical Association at Atlanta, about 1894 or '95.

I have used this mixture in the condition under consideration with, as I thought at the time, excellent results, and I am inclined to award it a useful place as a disinfectant in foot conditions generally.

I may say, however, that I do not know of any specific cases that have recovered following the continued use of any one, or even all, of the agents I have mentioned. That is to say, I do not know of a specific in every case. Sometimes one, sometimes another, line of treatment will secure favorable results. And it

may be that occasionally a case will recover in spite of all of them.

I am sorry we have not been able, so far, to institute any careful investigations into the true cause of this ailment; although it is one which certainly merits it, as it in the aggregate must at times occasion severe losses to horse and mule owners in the Gulf States especially; if not from permanent injury to the animals, at least from temporary loss of their use for a time, which is often quite considerable.

It has occurred to me that the condition might possibly be of a necrobacillotic character, but I have not been able to make the necessary investigation, nor have I heard of other animals, such as sheep, suffering from necrobacillosis in my section of the country, although they frequently occupy the same pastures as horses and mules which become victims of this coronary dermatitic condition.

I should, perhaps, add that the disease is much more widespread in some seasons than in others, and for the past several years it would seem that we have seen or heard remarkably little of it.

"SORE MOUTH," "BLACK TONGUE," OR ACUTE SEPTIC STOMATITIS IN DOGS.

As with the former condition, so with this—I am, unfortunately, unable to offer any positive observations, either as to the proximal cause or treatment, which might in any way be looked upon as specific.

Usually when the owner notices anything wrong with his dog, the condition has advanced to a stage which causes the patient great inconvenience in mastication and deglutition, and it is generally then that the services of the professional man are sought.

The buccal mucosa is intensely and uniformly injected, often assuming such a dark-red hue as to suggest the appellation, "black-tongue," which name some occasionally give to the ailment.

There is generally excessive salivation, with œdematous condition of the membrane. The inflammation may, probably, extend along both the alimentary and respiratory tracts, although I do not say so from post-mortem experience. The animal shows symptoms of an acute septic fever, and ultimately succumbs, the end being hastened by starvation through inability to swallow either solids or liquids.

The cause, so far as I know, is still in doubt.

So far as my observation has extended, the condition is one which affects country dogs rather than the purely city or town animal. Or, in other words, the victim, in my section of the South at least, is mainly the sporting dog, such as the setter, pointer or hound which has led me to the opinion that such animals are exposed while out in the country in the pursuit of game, to the probable cause, whatever that may be.

Gateways for organismal invasion in the dog's mouth are by no means rare, through abrasions of the mucous membrane from eating bones with penetrating points, and also through eating grass.

Dogs of the class mentioned are quite likely to come across carrion of some kind while out hunting, especially where the enforcement of sanitary regulations with respect to the proper disposition of carcasses is not of the strictest, and they are just as likely to feed upon it when the opportunity is afforded them.

I have been rather inclined to the opinion that this highly septic material may be one of, if not the chief cause of infection, when aided by the solution of continuity of the buccal membrane. However, this is merely an opinion, without the requisite backing of bacterial investigation.

Although this disease causes immense losses to owners of high-priced dogs in the South, it is questionable whether the Federal authorities, who have in their hands the disbursing of special appropriations, such as the Adams Fund, for purely research work along agricultural lines, would consider money spent in investigating a condition of the "sporting dog" a legitimate expenditure by an agricultural experiment station; and for

this reason the station is rather handicapped in its effort, or desire at least, to afford the necessary relief in this connection.

As to therapeutics: I believe that many more cases would recover than is the rule if they were taken in time, and before the condition became so extensive and far-reaching. But, as I have previously mentioned, it is not usually observed by the owner, nor is the aid of the veterinarian sought until a stage in the disease has been reached that renders it past amenability to treatment.

Satisfactory results are occasionally secured from the local use of different disinfectant and astringent agents, either singly or in combination. Of these I might mention listerine, borolyp-tol, glycothymoline, formalia, iodine, hydrogen peroxide, potassium chlorate, sodium biborate, potash alum, silver nitrate solution, carbolic acid solution, etc.

Demulcent liquid food is indicated, if the animal is at all able to swallow.

Although I have not had a personal opportunity of using them, I know of some practitioners who have tried some of the serums, especially antidiphtheritic, and antistreptococcic, but, apparently, with negative results.

As a preventive, I have thought, and occasionally suggested, that if it were possible and practicable to make and adapt a light, suitable muzzle, to the bird dog especially, that would prevent its eating putrescent material of any kind when out in the country after game, it might, in a measure at least, prevent this condition. And, in addition, if the mouth was to be well washed out after returning from the day's sport with one or other of the medicinal agents just mentioned, it might aid in the destruction of septic organisms in the buccal cavity. Even without the use of the suggested mechanical device the disinfectant treatment might ameliorate the condition.

It is possible, perhaps, that an autogenous vaccine might be prepared for each of the conditions mentioned, as it is scarcely possible to predict nowadays what may be done, with such rapid advancement in the important field of biologics.

I feel, gentlemen, that I have taken up your time with a "story," rather than a report, concerning the two conditions which I have attempted to bring to your notice in a brief way. However, I trust it may arouse greater interest regarding them, in those who are more or less called upon to deal with them, as they are undoubtedly of considerable moment to practitioners in certain sections of the South.

A GOOD MAN RESIGNS—The Department of Agriculture loses a particularly capable outfit of brains in Dr. J. G. Rutherford, C.M.G., Veterinary Director-General and Live-Stock Commissioner of Canada, who leaves the Government service for work that will bring him more money and greater peace of mind. Rutherford knew his job up and down, straight through, and clear across. He had been a member of Parliament and knew what the people wanted. He had been a farmer and knew what the farmers wanted. He was trained as a veterinary surgeon in the thorough English school and knew what the animals wanted. When he took hold in 1902 he found nothing to his hand except an Act of Parliament which was so much waste paper. In nine years he had created a health-of-animals branch, a meat and food inspection service with a hundred inspectors, a biological laboratory with a staff of trained pathologists, and a live-stock branch that is doing much to promote friendly relations between breeders and their market. Quarantine work has been systematized and the importation of live stock into Canada is now thoroughly under the control of the department. Hog cholera has almost disappeared; glanders has been stamped out except in Saskatchewan; cattle mange, horse mange, sheep scab, and many other minor diseases have been effectively handled. Rutherford brought unusual powers of special investigation to his duties. For example, when an epidemic broke out among the cattle in Nova Scotia he discovered that it was due to a poisonous weed. He brought in sheep that throve on the weed and put an end to the epidemic. As president of the American Veterinary Medical Association, Rutherford had the chief hand in forming the International Commission for the Control of Bovine Tuberculosis, whose good work has just begun. Incidentally Rutherford did a lot for veterinary education by taking it out of private hands and making it a university course. Like many brilliant, original, and public-minded civil servants, he seems to have been too good to keep.—(*Collier's*.)

DEGREES.

By S. R. HOWARD, HILLSBORO, OHIO.

"They purchase to themselves a good degree." (I. Timothy, 3-13.)

"My hoss has bots! I'm sure he'll die!"

Roars Sam Emanuel Free.

With beaming eyes his daughters cry,

"Get astute M. D. C."

"My cow has got the holler horn!"

Screams Martha Lydia Free.

Grandpa replies while shelling corn,

"Call keen V. M. D."

"My colt has got the hooks, I'm sure!"

Bawls Bub Emanuel Free.

Quoth grandma, "If you want a cure

Go get that sage M. V."

"My calves have surely got buckeyed!"

Whined rheumatic Mrs. Free.

Old man Grump said as he sighed,

"Get that wise M. D. V."

"My pup's been fed some powdered glass!"

Exclaimed Malinda Hess.

The children yelled, "O hustle up!

Go get deft B. V. Sc."

"My sow has tried but can not pig,"

Lamented farmer Hess.

"If that is true," replied a prig,

"Get skillful D. V. S."

"The D. V. S. is full of rum,"

Chimed in the young man Hess;

"The old V. S. for me, he'll come.

(He's sweet on sister Bess.)"

“ My son’s at veterinary school,”
 Said venerable Mr. Proctor.
 “ He’s D. V. M. or one of these,
 But never a Horse Doctor.”

l’envoi.

Then Shakespeare spoke, “ What’s all this spiel
 About, you Hesses and you Frees?
 What wound did ever heal
 But by degrees?” (*Othello, Act II.*)

DEGREE. An academical rank or title conferred on scholars by an institution of learning usually authenticated by a diploma certifying and guaranteeing proficiency in certain branches of learning or the arts, or sometimes as an honorary distinction.—(*Standard Dictionary.*)

For many hundreds of years people have known what a veterinarian or veterinary surgeon was. These titles can be protected by law as well as any mysterious jumble of letters. Knowing their meaning the people will fully respect us and our calling if we are proficient and worthy. If we are undeserving our abilities and characters stand on an extremely low plane of public estimation, and we will feel even this unambiguous and comprehensive degree “ hang loose about us like a giant’s robe upon a dwarfish thief.”

A CORRECTION.—Dr. Reuben Hilty desires to call attention to two errors in his article on “ Azoturia ” in the September issue. On page 654 the words “ good quality,” in brackets, following “ serum globulin,” *should read* “ good quantity ”; and on page 655, in the fifth line under “ *Treatment and Care,*” where it reads “ able to rise,” it *should read* “ unable to rise.” The doctor explains that these errors occurred in having his article typewritten, which copy he did not read. A typographical error in the same article on page 653 occurs by the letter “ l ” appearing where “ f ” should appear in “ defibrinated.”

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

EQUINE TUBERCULOSIS [*Brennan De Vine*].—Bred on the farm where he is, this five-year-old horse is reported off his food and blowing badly. He has 30 respirations a minute, a pulse of 50, and his temperature is 102° F. No definite symptoms being present he is considered as a case of slight feverish cold and put under stimulant treatment. After two days the temperature is down to 101° but the pulse and respiration remain the same. This condition lasted for four weeks and tuberculin test was applied. The injection was made on the near side of the neck without any antiseptic care taken. The local reaction was very large and the temperature raised to 105.6° F. Thinking that possibly the excessive local reaction had been due to some infection, a second tuberculin test was again applied some two weeks after, but this time the region of the neck where it was done was thoroughly disinfected. This injection was followed by a similar local reaction and raised temperature. The case was one of tuberculosis and the horse destroyed. *Post mortem*—Heart, liver, bowels and kidneys normal. Spleen covered with tuberculous nodules. Lungs enormously enlarged. The heart and bronchia cut off, the lungs weighed 77 pounds. The mediastinal lymphatic glands were apparently normal. Microscopic examination of the lungs showed giant cells and tubercle bacilli.—(*Vet. Record.*)

UNUSUAL CASE OF ANTHRAX IN A MARE [*J. H. Carter, F.R.C.V.S., F.R.S.E.*].—Four-year-old breedy harness mare was off her feed one morning; she was dull and dejected, with a slight nasal discharge, breathing slightly disturbed, pulse 96, temperature 104 3-5. Auscultation and percussion negative; extremities normal. A fever draught was administered. The next day the mare is worse, breathing labored. She is dull and dejected, ears and extremities cold. Conjunctiva injected, pulse imper-

ceptible. Temperature dropped to 102°, refused all food and water. Stimulants are prescribed and mustard applied to the chest. The mare died after a few hours. *Autopsy*—Great quantity of straw-colored fluid escaped as the abdomen is open; one ovary is ruptured and showing a large black clot of blood. The spleen was much swollen and weighed 9½ pounds. Some blood was collected and examined with microscope. Anthrax bacilli was found in great quantity. Inquiry into the history of the mare failed to give information as to the cause of the disease.—(*Vet. Record.*)

FRACTURE OF THE HYOID BONE [*Capt. Clive Webb, A.V.C., F.R.C.V.S.*].—Admitted for treatment of suspected strangles, this seven-year-old brown mare has a ball given to her with a new pattern balling gun, which had been successfully tried before in several instances. On the present occasion, however, the mare threw her head about and when the gun was withdrawn the end of it was covered with blood. A few days after there was profuse discharge from both nostrils of food and blood. There was no cough. Frequent examination of the mouth and fauces were negative. The discharge continuing to be profuse, the left maxillary sinus was trephined but found healthy. No improvement followed. Partial paralysis of the pharynx was suspected. Nasal cavities flushed out with rubber tube. Then symptoms of pneumonia developed. Stinking discharge followed the gangrene of the lungs. Death. *Post mortem*—Extensive lesions of septic pneumonia on both lungs. Long cornua of hyoid on right side fractured about its centre. A piece of it has become exfoliated and detached from the main trunk, so that the fractured ends of the cornua did not come into apposition. Guttural pouches normal.—(*Vet. News.*)

PARTURIENT LAMINITIS AND ADRENALINE [*P. R. Thompson, M.R.C.V.S.*].—Twelve-year-old brood mare was six months pregnant. One morning she is uneasy and has colic. She was about to abort. The foetus is delivered. In the evening foetal membranes are retained and the uterus half prolapsed. The envelopes were ligatured as high as possible, the soiled portion cut off and the uterus put back in place after disinfection. On the following evening, laminitis of both fore feet was well marked. The temperature was up to 103.4° F. 3 c.c. (90m) of adrenaline, chloride solution 1-1000 diluted with an equal

quantity of sterilized water, were injected at two points of each coronet about an inch above the hoof. Sulphate of magnesia and sulph. of quinine were prescribed. Improvement was surprising, already on the next day and no further treatment indicated. Recovery was complete in four days.—(*Vet. Journal.*)

ACCIDENTS [*G. Mayall, M.R.C.V.S.*].—Records of mishaps by automobiles. A Schipperke is knocked on the head, is in a comatose condition from concussion of the brain. Two doses of salt volatile are given in six hours. Late in the afternoon he raises his head and in the evening is walking. Iodide completes the recovery.

Fox terrier is run over across the fore ribs and back. Bleeds from the mouth. Purgative, hot flannels and liniment on the thorax. Recovery.

Dog run over across the loins, only sore for a day or two.

Scottish terrier also run over, passed blood in his urine, chloritone, hazeline, milk diet, good recovery in a week.

Cat fell in bucket of whitewash. Got over safe after good washing; is then removed and was stiff only for a day or two.

Fox terrier also fell in bucket of whitewash; nothing is done and after three days his hind legs and genitals are excoriated and inflamed; his anus was severely burnt. Dusted with boric ointment, but after a week the dog died. Immediate washing after the accident would have saved him.—(*Vet. Journal.*)

PROLAPSUS RECTI IN A DOG [*Same Author*].—The concise record of a case where a prolapsus of the rectum existed was reduced and the dog had a capsule of chloritone and an injection of equal parts of hazeline and cold water. Remained all well for a week when the trouble returned and was treated in the same way; treatment being followed for six days. The dog passed large quantities of matted hair. Finally got entirely well.—(*Ibid.*)

PYÆMIA IN A DOG [*Prof. Geo. H. Wooldridge, F.R.C.V.S.*].—Five-months-old Irish terrier had swollen throat and head. Sub-parotideal lymphatic glands of both sides swollen also. One is fluctuating, punctured, and has creamy pus escape. Appetite is poor, tendency to diarrhoea. Treatment, massage and local fomentations, with chinosol solutions, carb. bismuth and tanniform in emulsion petrol and extract malt's liquidus. After a

week the dog is in very poor condition. Very thin and weak, he has numerous superficial abscesses over the body, the pre-scapular region, the axilla, the groin, behind each thigh, the base of the tail, the dorsal vertebræ, the poll and the left angle of the haunch. Most of these abscesses are ulcerated and discharge creamy pus. Local treatment was chinosol, 1-500, tinct. nux vomica and then nuclein solution of Parke, Davis & Co. injected subcutaneously in dose of 2 c.c. Soon the patient became brighter, his appetite returned, the abscesses healed and by degrees convalescence was fully established. To the use of nuclein the writer attributes the principal effect of the recovery.—(*Vet. Jour.*)

CHOLESTEATOMA IN THE BRAIN OF A HORSE [*Sir John McFadyean*].—The record of the case tells that the mare was purchased at the age of seven and worked for four years without showing any trouble. She was then kept off work as having sprained the muscles of her back. She was crossing her hind legs and unable to move backwards. After two months of treatment she was able to resume work, and during twelve months she remained dull, sluggish, had to be urged with the whip, to which she paid little attention. On three occasions she fell back in her stall and broke the chain of the halter. Laid up again, she has complete anorexia, extreme dullness, if compelled to move backwards she drags her feet on the ground or rears up. The pulse is almost imperceptible. Treated with stimulants for a week she gradually improved. After working again for short while she was one day put in her box stall to feed when an hour or so after she was taken with giddiness, reeled round her box with the head held high, fell down, got up and thrust her head into a corner, acting as if she was pushing forward. The next morning she was found dead.

At the post mortem the inspection of the brain showed between the right cerebral hemisphere and the cerebellum a tumor which had undoubtedly grown in the hemisphere. The growth had an outer membrane and was surrounded with blood. The contents of the tumor also partly mixed with blood were brown in color, putty-like in consistence and felt greasy to the touch. Microscopic examination showed no cholesterol or other crystals in their contents.—(*Journ. of Comp. Path. and Therap.*)

FATAL HEMORRHAGE FOLLOWING TOOTH EXTRACTION [*Mr. J. McRea Frost, M.R.C.V.S.*].—Four or five-year-old Scotch

terrier has a continuous discharge from under the orbit. Diagnosis, pus in the antrum of the carnassial molar. Extraction is advised performed and the tooth comes out easily and chinosol injection thrown from the opening on the face through the empty alveola. Hemorrhage not unusually abundant and the dog is sent home with antiseptic wash to be syringed in for a few days. The next morning report came that the dog had lost great deal of blood during the night. Adrenalin stopped the flow and the socket was plugged with gauze saturated with same solution. The dog being very restless had morphia injected hypodermically, with also ergotine. In the afternoon the bleeding had stopped but there is a large swelling about the face and a clot of blood protruded out of the facial opening. The mouth and cheeks are full also. This is washed out and adrenalin used again. A quarter of an hour after the dog vomits pure blood. The bowels were first strained with blood and then pure blood runs out. Then the dog grew worse and died in half an hour. The author considers this case as one due to hæmophilia.—(*Vet. Rec.*)

CONGENITAL DEFECT IN THE HEART OF A HEIFER [*A. Leslie Sheather, M.R.C.V.S., B.Sc.*].—A pure Guernsey heifer, aged 15 months, has shown no symptoms of illness. She is in poor condition. One morning she is observed standing for about a minute with head and neck extended, swaying from side to side, and as if she had been down and struggling. Respiration was labored. Animal coughed a good deal. On auscultating the chest the heart sounds were distinct. The following day the cow seems in perfect health and the morning after is found dying. *Post mortem*—Lesions exist only in the heart, which resembles in shape more that of a dog than that of an ox. Pulmonary artery is larger than the aorta. On opening the cavities of the heart there were observed: The auricular surfaces of both auriculo-ventricular valves have small vegetations which are more numerous on the left side. The largest is as big as a pea. The valves of the pulmonary artery show large fibrinous deposits on the arterial side, sufficiently large to occlude the vessel. On the inner surface of the ventricular wall and close to the pulmonary artery a number of tumor-like projections were found. The aortic valves quite normal, but the vessel measured only $\frac{3}{4}$ -inch in diameter. Auricles appear normal except that the foramen ovale is persistent in form, oval in shape, and measur-

ing about $\frac{1}{2}$ -inch in diameter. In the interventricular septum there was to be seen a large, somewhat triangular foramen, which in the left ventricle opened immediately below the aortic valves and in the right close to the auriculo-ventricular opening, and between it and the orifice of the pulmonary artery. This opening measured two inches in length and one in breadth.—*Journ. of Comp. Pathol. and Therap.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

TWO CASES OF COLD ABSCESES OF BONES [*Mr. Cabaye, Student.*].—A three-year-old dog is quite lame on the right front leg. The shoulder is the seat of a diffused sore and warm swelling. There is no history of the case, but as the dog has crossed a river in swimming, rheumatism is suspected and appropriate treatment prescribed. No improvement is obtained and after a month the dog does not rest on his leg any more; there is hypertrophy of the scapular fossæ and a warm and painful swelling under the shoulder. Sub-scapular abscess is suspected but exploring needle gives no result; the region is blistered and finally the dog is destroyed. At the autopsy the scapula is found with its external face the seat of hypertrophic periostitis, the muscles are trophied. The internal face shows also periostitis and an abscess contained purulent fluid. There was no indication of fracture.

A ten-year-old dog received a violent bruise on the left arm, which is treated by blister, firing and tinct. of iodine, without results. The animal does not rest on his leg and there is a swelling on the superior third of the bone. This swelling is warm and painful. The forearm is atrophied. Electricity is resorted to without result and the dog is destroyed. *Post mortem*.—The subcutaneous tissue is thick and infiltrated, scapular muscles atrophied and pale in color. Their tendons are surrounded with a thick envelope of fibrous exudation which forms the anterior wall of a large abscess bound posteriorly by the humerus. This abscess communicates with the central cavity of the humerus by two fistulas, one in front below the articular head. The humerus is the seat of an hypertrophic periostitis, all over its

surface except the inferior extremity, which has remained healthy. The condition and form of the body of the humerus indicated that there had been a fracture of the bone.—(*Rev. Veter.*)

HEPATIC ABSCESS OPENS IN POSTERIOR VENA CAVA [*Mr. Alfred Lhoste.*].—Seven-year-old steer has been ailing two years ago but a diagnosis had remained doubtful. Since that time the appetite has been gradually diminishing and as a consequence he has lost flesh and strength. His skin is thick and close to the bones, the hair standing, the mucosae are anemic. The temperature is normal. Heart and lungs present nothing abnormal. Faeces are rare but normal; nothing wrong towards the kidneys; tuberculin test is negative. After a few days of tonic treatment the steer dies suddenly. At the autopsy, the liver, largely hypertrophied, has in its centre a tumor as big as a child's head. It is soft, fluctuating and contains about one litre of yellow thick pus. At the point where the purulent collection is in contact with the vena cava, this is found thinned and with an ulceration opening in the vein. The inner coating of the vessel shows that it is covered with pus. The right auricle and half of the right ventricle are filled with purulent fluid, which is traced in the axillary vein.—(*Rev. Vet.*)

CACODYLATE OF SODIUM IN VETERINARY MEDICINE [*Mr. Lanceleur.*].—The author has used it in hypodermic injections at the dose of 50 to 75 centigrammes a day in 1/10 solution. The animals received two injections daily for ten days, followed by a rest of the same lapse of time. In a certain number of animals, thin, in bad condition, this indication has given excellent results, shown by an increase in weight (sometimes very great), 80 kilogs in 45 days. It can be recommended to bring animals rapidly in good condition, and especially those convalescents of severe diseases. It facilitates assimilation. Indeed, arsenic stimulates the cellular functions, increases the appetite, improves the digestion, the nutrition, and of course promotes the development of fat.—(*R. V. and Military Vet. Rev.*)

RUPTURE OF THE HEART IN A HORSE [*Mr. Carret.*].—An eighteen-year-old mare is under treatment for pasteurellose. As the recovery seems to be complete she dies suddenly.

At the autopsy the pericardium is found largely distended by blood. The heart is very big and the superficial grooves are

filled with an abundant mass of fat. The myocardium is pale, easily torn, and covered with hemorrhagic points. The right auricle has a laceration three centimeters long. The histological examination shows a fatty infiltration of the interstitial connective tissue and an acute inflammation of the myocardium towards the point of the heart. This fatty degeneration and the presence of acute myositis was the cause of the laceration.—(*Ibid.*)

SYMPATHETIC OPHTHALMIA [*Mr. Vauthrin*].—Transported by rail a four-year-old colt gets a severe bruise of the left orbital region, conjunctivitis and corneitis follows with swelling of the eyelids, lachrymation and photophobia. Some time after these manifestations an abscess is found on the internal commissure of the eyelids, it is opened and a few splinters of bone removed. About that time an almost complete loss of sight is observed on the right side. Five months later when the mare is called to pass a remount inspection, nothing abnormal is detected. But three months after the horse is entirely blind, knocking himself against the door of the box stall, walking with hesitancy and the characteristic allure. With the ophthalmoscope, after atropine instillation, the left eye is seen half dilated, the pupil quite regular but with a strong synechia, which from the centre of the crystalline lens, runs to the middle of the inferior border of the pupil. There is also diffused capsular cataract. On the right side, towards the inner angle of the pupil, there are small whitish spots, lenticular cataract. The vitreous is cloudy and the aqueous also, and opalescent. The sympathetic origin of the right ophthalmia is quite justifiable.—(*R. V. Milit. Vet. Rev.*)

LATE CASE OF PARTURIENT APOPLEXY [*Mr. F. Muraz*].—Cases of this trouble occurring a long time after the accouchement are not numerous. In the month of May the writer was called to attend a seven-year-old cow which had become suddenly sick. She is lying on the left side, the head inclined on the shoulder; she moans frequently, is tympanitic, temperature 38.3° C., 72 pulsations and 45 respirations are recorded. The udder is flabby and empty. The animal is unable to rise. It is a plain case of apoplexy and the cow has had her calf seven weeks before. Insufflation of air in the udder is done at once. After one-quarter of an hour improvements are noticeable in the symptoms and six hours after the animal is up. Recovery, however, was not complete as there remained a paralysis of the lower

jaw, lips and tongue and the animal is unable to eat. This alarming condition, however, soon subsided and in three days the cow had completely recovered.—(*Bullet. des Sci. Vet. de Lyon.*)

MEDIASTINE TUBERCULOUS ADENITIS CAUSES INTERMITTENT TYMPANITIS [*Mr. Pierre Bitard*].—Five-year-old steer is rather thin and in poor condition. Since six weeks he is subject to intermittent tympanitis, which subsides after several eructations. He has great appetite but seldom ruminates. He is treated by the keeper, who punctured the rumen, but as the tympanitis increases the writer is summoned to see the steer. Suspecting the case one of tuberculosis, the test of tuberculin was advised but could not be applied as the temperature of the animal varied between 39° and 39.6° . Laxatives and digestive stimulating treatment is prescribed. No improvement is obtained. After five days of observation slaughtering was advised. On opening the cadaver there was found under the rumen a large peritoneal infiltration extending from the wound of the rumen to the sub-lumbar region. This is due to the improper puncture of the keeper. The abdominal organs are healthy. In the thorax the lungs are sound but two of the lymphatic glands of the posterior mediastinum in connection with the pneumogastric are hypertrophied and full with cretaceous tuberculous matter in a state of softening.—(*Progrès Veter.*)

THE meeting of the New York State Veterinary Medical Society, held in Brooklyn in September, was a marked success. The president's address was a masterpiece, the literary program ample, and the discussions interesting and profitable. All of which resulted in a list of resolutions adopted by the society that are directly in line with the progressive condition of veterinary medicine to-day. Beside a good attendance by its members, the society was honored by visiting veterinarians from Ohio, Pennsylvania, New Jersey, Connecticut and Massachusetts. The clinic at the Berns Veterinary Hospital was large and varied; ranging from operations upon horses to the caponizing of fowls. The finale, the shore dinner, was thoroughly appreciated by both sexes.

CORRESPONDENCE.

THE RETROSPECT.

FORT COLLINS, COLO., September 14, 1911.

Editors AMERICAN VETERINARY REVIEW:

The Toronto meeting is now history, and a cursory glance over the events of this meeting gives us much satisfaction. Each annual conclave marks a mile-post in the history of the Association, and at each event we find that we have learned much through the experiences of the past year, and are better qualified to judge of the wisdom of our course for the ensuing year.

I presume that this was the largest, most enjoyable, and successful meeting in our history. The lengthy program made it impossible to discuss papers, and this was a disappointment to many and suggests that in the future if we are to have adequate discussions, the program might profitably be divided into three sections as follows: Section 1, Technical, for laboratory research men; Section 2, Practical, for discussion of things pertaining to everyday practice; Section 3, General, including papers not pertaining to the other sections.

The money appropriated to investigate the Veterinary Colleges, while seemingly inadequate, should be ample to start the work and bring in some reliable information as to what the several colleges are actually doing.

The regulation fixing a minimum requirement for matriculation, while not adequate for the lofty ambitions we cherish for our profession, yet, all things considered, was a fair compromise, and speaks for progress. The adoption of a uniform degree (D.V.M.) was a wise move, and with prejudice laid on the shelf, will not be difficult and will mean much in added prestige to the profession. The Division of Veterinary Science of Colorado State College, has advertised to grant the degree of D.V.S. this year, but since the action at Toronto and by request of the senior class the degree of D.V.M. will be conferred instead.

The American Veterinary Medical Association has not the legal authority to demand these things, but it has, besides the moral obligation to work for the common good of all, the obligation implied on the part of each and all to remain in good standing, by complying with the requirements of the Association.

Abolishing the impossible Committee on Disease was a good thing, but if my memory serves me right, there were no other committees created to take its place.

In the Associated Faculties meeting a committee was appointed to interview the Post Office authorities in the interest of suppressing Correspondence Schools in the use of the mails.

Much more important, and useful business was transacted at the Toronto meeting. We are certainly under obligation to the local committee for their efforts, and especially to Dr. Grange, who seemed to shoulder the bulk of responsibility. For many reasons we shall not soon forget Toronto.

GEO H. GLOVER.

DR. HORACE B. JERVIS, of Houlton, Me., who had his REVIEW go to England last year, while spending some time there, because he felt that he was losing track of things without it, says in renewing his subscription: "Thanks for the remainder duly to hand to-day, and am enclosing my subscription for ensuing year. I predict a larger circulation this year than ever; or at least trust that any veterinarian who has not been subscribing hitherto, will do so *at once*, as he will find it *an invaluable aid to him in whatever sphere his work lies.*"

HAS CONTRACTED THE REVIEW HABIT—Dr. H. E. Myers, formerly a practicing veterinarian, and now a member of the firm of "Myer Brothers and Company," funeral directors and embalmers, Fostoria, Ohio, in renewing his subscription, writes: "Enclosed find check for renewal; have been out of actual practice for two years, but the REVIEW was with me just the same. In fact, I would not want to run a piano store without it."

DR. CHARLES E. CLAYTON, one of the "steadies" at the meetings of the Veterinary Medical Association of New York City, spent some time abroad in the early part of the summer, and looks much improved as a result. The doctor, who had been sort of "peevish" all winter, thought a sea voyage might do him good, and the results have proven the wisdom of his prescription.

OBITUARY.

HENRY E. TALBOT, M.D.C.

Dr. Henry E. Talbot died at his home in Des Moines, Iowa, on July 18, 1911, from cancer, in the forty-seventh year of his age. Dr. Talbot was born at Pella, Iowa, on November 16, 1864, where he lived until he began the study of veterinary medicine at the Chicago Veterinary College; from which institution he graduated 1895, when he went to Des Moines to enter practice and remained there up to the time of his death. The doctor stood high in his profession, and in the estimation of its members; and was held in high esteem by his fellow citizens. He was president of the Iowa Veterinary Medical Association, and secretary of the State Board of Veterinary Medical Examiners. For many years Dr. Talbot conducted his practice alone, but since January, 1910, had associated with him, Dr. John M. Vernon.

Dr. Talbot was married in 1889 to Miss Elizabeth Burns, of Prairie City, Iowa, who survives him. He is also survived by his father, four brothers, two half brothers and two half sisters. Two of his brothers, Drs. W. W. Talbot, of Pella, Iowa, and Seth P. Talbot, Centerville, Kansas, are also veterinarians.

GEO. F. McGUIRE, M.D.C.

Dr. Geo. F. McGuire died at his home in Hartford, Conn., on April 12, 1911, of valvular disease of the heart, and complications. Dr. McGuire was a graduate of the Chicago Veterinary College, class of 1894, and has been practicing his profession since that time at New Britain, Conn., where he was associated, at the time of his death, with Dr. B. D. Radcliffe, under the firm name of "McGuire & Radcliffe." He is survived by a widow and a daughter.

V. L. JAMES, V.S.

Dr. V. L. James died at his home in Middlefield, in August, 1911, in the seventy-first year of his age. The doctor was a highly respected citizen. He is survived by his wife, three daughters and two sons.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

With a few introductory remarks President George H. Glover declared the forty-eighth annual meeting of the American Veterinary Medical Association in session, at 10.30 a. m., August 22, 1911, in Convocation Hall, Toronto, Canada, and introduced the Honorable James Duff, Minister of Agriculture, who delivered the address of welcome to Canada.

ADDRESS OF HON. JAMES DUFF, MINISTER OF AGRICULTURE.

MR. PRESIDENT, LADIES AND GENTLEMEN—I am very glad indeed to appear this morning on behalf of the government of our province, and to extend to you a very hearty welcome to this beautiful city of Toronto, the capital of the province in which you are now holding your annual convention. I am very sorry that owing to circumstances over which the Prime Minister of the Province had no control, he was unable to be here in person and extend to you a proper welcome to Ontario; but in his absence I am here to perform that duty. I can assure you, sirs, that the people of this province, from one end to the other (and I think I may go further and say that the people of Ontario as a whole), are looking with a great deal of interest upon the work that is being performed to-day by the various veterinary associations and colleges, not only on this continent but elsewhere. I am very glad to hear, sirs, that it was the speech of the principal of our college here in Toronto, Dr. Grange, that was the means of your deciding a year ago to hold this annual convention in Toronto. I shall not be quite satisfied unless, when you have put in your days in session here and finished your business, you again put in several days in seeing this beautiful city, and possibly some of the territory bordering upon it. If you do, I think that you will feel that your trip to Toronto has been well worth while, and that Dr. Grange did not say too much for his province while pleading with you to make it your meeting place for this year.

Veterinary science in our own province has been making splendid strides. Of that I do not propose to speak, except to

say this, that at the present time the government of the province, which took over the old veterinary college (and I might say in that connection that the veterinary college is now fully affiliated with Toronto University), stands in the same relation to it as to the Agricultural College at Guelph, and the various other colleges of which you will see evidences if you walk through this splendid aggregation of buildings in the park which surrounds this great university of this province. Since assuming control (or direction might be a better word) of the veterinary college of this province, we have, under Dr. Grange's superintendency and influence, gone on until we are fast outgrowing the buildings down on Richmond street, and arrangements have been made, and we hope before another year that a beautiful new college building will be erected on University avenue, which will be not only a credit to the city of Toronto, but will be a credit to all those who have taken an interest in veterinary science in the Province of Ontario during the last forty or fifty years. Speaking for the province, I may say that anything that we can do in the direction of aiding and helping on the development of veterinary science in connection with the work as it is taught to-day in the college (either in the old college or as it will be in the new college, the grounds for which have been secured, and on which we are hoping very soon to build), will be gladly extended. It is not a matter for the city of Toronto alone, or for the people of Toronto, but it is altogether a matter of provincial concern, and the people in northern Ontario are equally interested with those in this portion of the province to do everything within reason for the development and uplifting of this school in Toronto, and for the further development of this great science, as it has now come to be, of veterinary work. The eastern provinces of Canada, and the people located in those provinces, are all equally interested in the work which is being carried on in this college. Our entire people now realize the importance of the development of veterinary science, because as time goes on we find, and the people find, that it is very much to their advantage (particularly the people of the profession or occupation to which I have the honor to belong, the agricultural), that the men who go out into the different portions of the provinces, and into our cities, towns and villages, and hang out their shingles, to use a common phrase, that they shall be fully fledged and well-equipped veterinarians; that those men shall be equipped in the fullest possible manner in order to do justice to the people and take care of

their live stock interests, in order that they may render the best service in a professional way to the people of the locality to which they go. I think I am safe in saying that this is becoming more and more apparent; in fact, it has been amply proven, and when we look over what has taken place in the veterinary college here in Toronto during the last five or six years, it is not necessary to look for any further proof.

Now, Mr. Chairman, I do not think I should trespass longer on your time. I wish again on behalf of this great province to extend to you a hearty welcome. The Province of Ontario is, in many respects, the greatest of this great confederation of which we are proud, and we beg to extend to you a royal Canadian welcome, and we sincerely trust that your visit to the city will be of such a character that you will all carry back or away with you, whether you live in the great republic to the south of the international line, or whether you live in some other province or part of the Dominion of Canada, or whether you have come here from some other part of the world, I trust that you will go away from this international convention with a splendid recollection and fond memory of your visit to this beautiful city of Toronto. I again assure you that all over the province the people will take a great deal of interest in your daily deliberations, and I sincerely hope that these deliberations will not only be of benefit to the great organization over which you preside, sir, but will perhaps be of some particular benefit to the veterinary college of this province, under whose auspices you are convened at the present time, and whose guests you will be for the days of your stay in this beautiful city. I thank you. (Applause.)

PRESIDENT GLOVER—Ladies and Gentlemen, as the mayor has not yet arrived, it will be necessary to change our program somewhat. The next will be the President's address. Following that we will hear from Mayor Geary.

PRESIDENT GLOVER'S ADDRESS.

FELLOW MEMBERS OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION AND FRIENDS—Two years ago Dr. J. G. Rutherford, in the course of his address as president of this association, remarked as follows: "In now acknowledging your kindness in this regard (electing him president) I do so with the full acknowledgment and realization of the fact that the honor was bestowed as an act of international courtesy toward my country,

and not because of any particular worth or merit of mine." Now, I presume that our worthy brother would insist that our meeting in Canada is purely a matter of international courtesy. If so, I wish to inform him that he has allowed his generosity to influence his judgment in these matters; for while those of us living south of a certain geographical line desire to extend every courtesy to those north of it, yet the real facts in the case are that the brother was elected to this office because of personal merit, and we are here on Canadian soil because we were extended a most cordial invitation, because we wanted to come to the beautiful city of Toronto, and because we have previously enjoyed a taste of Canadian hospitality.

I have a warm place in my heart for Canada, for it was at a previous meeting in Canada that I was elected to membership in this association, and what is to me even more eventful, when I sought a wife I was obliged to forsake my native land, as a "forlorn hope," and sojourn to Canada.

In times gone by some of our people, with more enterprise than morals, I am sorry to say, have experienced a sudden and resistless desire to make a hasty departure, under stress, for Canada, but reciprocity has now made it so difficult for a fugitive Yankee to hide his head in Canada that he may as well stay at home and take his chances.

That reciprocity may be effected between the two countries which will be far-reaching in trade and mutually advantageous, is a "consummation devoutly to be wished"; for we are neighbors, we speak a common language, we are actuated by similar motives, we are inspired by the same laudable and innate love of home and native land, that and in the drama of life we are alike acting our part as best we can. In a larger sense, we are more than countrymen, we are cosmopolitans, "heirs of a common heritage, children of the self-same God."

We are proud of our chosen profession and the progress that it has made. The progress of civilization has been slow and the race has suffered and died because of ignorance of the "things which God hath prepared for them that love Him," but we have been gaining momentum of late, so many of nature's hidden mysteries are revealed and such a vista of possibilities greets our eager eyes that we are wont to speculate, and perhaps over-estimate, what the future has yet in store for us.

Man has progressed just to the degree that reason has dominated his animal instincts, just in proportion as he has ceased to

fear and place sole reliance upon things metaphysical, acquired faith in himself and sought the physical causes of his troubles and met them with physical means, as he has outlived seances and learned something of the sciences, just as he has ceased to grovel in impending doom and gotten his mind on pending facts, just as he has gotten out of the realm of mythology and looked squarely at the facts of biology, just as he has learned that superstition, fear and hate are the twin brothers of ignorance and that love, with its attributes of faith, industry and self-reliance, conquereth all things.

Harmony is the prime essential to strength in any institution, and to this factor must be attributed, more than to any other, the rare interest and splendid growth of the American Veterinary Medical Association. This association has been the alma mater to the veterinary profession in America, and as such has wisely directed its educational and ethical trend. We are becoming a large organization, our membership is increasing rapidly, likewise our expenses. Our literary program might be profitably extended and this can be easily done by dividing the meeting into sections, as was inaugurated last year at San Francisco. Some of our members, and many would-be members, complain of a dearth of practical discussions, and for this reason they have failed to attend our meetings. To satisfy this charge, which perhaps has some justification, I wish to suggest that one section of the program might be devoted to a practical discussion of cases met with in every day practice. As our association has grown in membership, the volume of business to be transacted in open session has increased to such an extent that much of our valuable time has been given to petty business details that might appropriately be transacted in committees. The posting of names of candidates, instead of reading them, will save some time, and it is to be hoped that members will aid as much as possible in facilitating business and not hamper it by long contention over matters of minor importance. The work of the publication committee has grown in volume until it is seemingly unfair to ask this service of any of our members without compensation. I, therefore, wish to recommend that in the future an annual salary of \$350 be paid to the chairman of this committee, and that a like amount constitute the salary of the secretary of this association.

It is apparently useless in a brief address like this to undertake a discussion of the history of veterinary medicine; we have

been making great strides forward, but as yet have scarcely a glimpse of the mysteries of nature's complex processes. Let us for a few moments briefly review some of the things of special significance apropos of the time and occasion.

I think you will agree with me that the interest of the profession to-day is directed largely toward immunity, to the utilization of the body defenses in preventive and curative medicine. Following the pronouncement by von Behring, in 1892, of the discovery of antitoxins and the promulgation of the theory of phagocytosis by Metchnikoff, came the inevitable inquiry as to the unaccountable leucocytic activity in some cases and its absence in others. This has been explained by the theories that there are substances in the fluids of the body called alexins which constitute the important factor in opposing bacterial invasion; the discovery of opsonins, which prepare the way for phagocytic activity, and the theory of aggressins, which are supposed to act by negative chemotaxis upon leucocytes. In fact, the study of the blood has afforded such a fertile field for scientific adventure and with promise of such an abundant and early fruition that investigators seem, in some instances, to have wandered into the labyrinth of mere hypothesis. One ultra conservative writer in speaking of antibodies says: "Not until antibodies and their antigens have been brought under the dominion of weights, measures and chemical formulæ; not until their chemical and physical properties have been ascertained by methods lying outside biology, shall we be able to feel sure that we are dealing with things and not with phantoms." On the other hand, the therapeutical value of antitoxins, vaccines, serums and bacterins has been proved in actual practice and supports the theories in many cases which underlie them. In the face of past achievements and in the light of our present knowledge, it certainly is no idle dream to predict that the time is coming when it will be possible to build up the body defenses against any and all bacterial diseases. Our work must go forward by three parallel and seemingly equally important lines; first, combating disease wherever found and by every known agency; second, fortifying the body by its natural defenses and other agencies; third, waging a relentless warfare against pathogenic micro-organisms.

While interest in serum-therapy has been largely monopolizing the profession, we must not overlook the achievements in chemo-therapy. The most noted example of this newer therapy is the arsenical compound "606" of Ehrlich. The outcome of

certain combinations of "606" in the treatment of protozoan diseases will be watched with interest. The claims of 1 to 1000 solution of chinosol in tuberculosis, and of benetol inhibiting the growth of organisms in the animal body, are not so well established but will bear watching. The vastly overestimated value of drugs in the treatment of disease was a relic of mediæval superstition and belief in magic. The reaction which threatened to carry it to the other extreme has been gradually giving away in the light of modern science to an increased confidence based on a more enlightened and conservative therapeutics.

It is only in recent years that we have surmised the full significance of parasitism. It has now been proved that many parasites, especially worms, give off poisonous chemic substances. fluids from the cysts of certain larvæ have been found extremely poisonous when injected into the bodies of experimental animals; uncinariæ, as well as other forms of intestinal parasites, especially those belonging to the strongyli family, not only rob the host of blood and nutrients, but poison their host by products given off from their bodies. These toxic products cause eosinophilia, and in some case cloudy swelling, focal necrosis and death.

In surgery we have marked great progress, but we are now and must continue to be content with second place in major surgery. We cannot reasonably deny this fact when we stop to consider that practically all major operations on the human are performed in well-appointed hospital, while in our subjects, their removal to even such hospitals as we have is scarcely practicable; their lack of intelligence causes disastrous interference, their bodies are covered with hair, and the incentive for our services is largely pecuniary. Progress in the science of surgery is especially noted in asepsis and antisepsis, surgical technic, in safe anesthetics adapted for different kinds of animals and in fortifying the body for operation by the body defenses and other means.

Reports from many sections of the country show an alarming increase of rabies. In England rabies was stamped out, largely by compulsory muzzling of dogs. In this country, a doubt fostered by some misguided medical confrères as to the reality and importance of the disease, combined with a maudlin sentiment for the dog, has made the enactment of muzzling ordinances in most cases impossible. The success of the Pasteur treatment can no longer be reasonably questioned. An antirabic vaccine

for the preventive treatment of rabies in both the human and lower animals is on the market.

Hog cholera continues to be the great scourge among hogs wherever the hog raising industry is carried on extensively. In spite of the fact that several of the state experiment stations, some private firms and biological houses have been manufacturing hog cholera serum, yet not enough has been available to supply the demand. The laboratory claims for this serum have been fully substantiated in the field as indicated by the unprecedented demand for it.

More vigorous steps are being taken by the United States Department of Agriculture and vast sums of money have been spent to eradicate the southern cattle tick. What the consummation of this laudable undertaking would mean to the cattle industry of the south can hardly be estimated.

Dr. N. T. Ferry reports the discovery of the specific organism of canine distemper. This he has named bacillus bronchicanis. Dr. J. P. McGowan, of the Royal College of Physicians' Laboratory, Edinburgh, has confirmed the finding of Dr. Ferry.

While it has been suspected in a general way that tuberculosis existed to an alarming extent among cattle and increasing rapidly in hogs, yet we have never until quite recently been in possession of statistics that gave us any reliable basis for definite calculation as to the extent of the disease and the economic loss which it has entailed. The United States Bureau of Animal Industry report for 1908 gives tabulation of 400,008 cattle tested for tuberculosis by federal and state officers, with 37,000 reactors, or 9.25 per cent. Of the reactors, 24,984 were slaughtered and 93.39 per cent. were found tuberculous. Statistics like these are invaluable and give us a more definite understanding of the magnitude of the problem confronting us. From many sources the propaganda of education is reaching the people and having its effect. Federal, state and municipal laws looking to the control of tuberculosis, if too far in advance of the people, will not be enforced, but are in themselves educational. From many sources come evidences of a stronger determination to wage a relentless warfare against the bacterium tuberculosis along scientific lines. The reliability of the ophthalmic test is questionable. The intradermal test, if its reliability could be assured, would have many practical advantages. The subcutaneous tuberculin test is one of the great discoveries of modern times; without it we should be helpless in fighting this disease; with it we feel

that the divine hand has pointed out the way. Faith in the reliability of the tuberculin test is no longer questioned save in rare instances of the rankest prejudice.

Several investigators of repute are working with equine infectious anemia and progress made in the last year in determining the etiologic factor and means of control has not been very encouraging. An important thing in this connection is the report of Dr. L. Van Es, in regard to the transmission of infection through the urine. The reported increase in prevalence of this disease is not substantiated, and is probably due to the fact that the disease is more easily and therefore more generally recognized.

While most of the states have appropriated liberally for the eradication of glanders, the disease still prevails. The reason for this lies essentially in the fact that glanders is an insidious disease, and from its nature is seldom recognized save in the typical form and in the last stages. Wonderful progress has been made in the diagnosis of glanders and which portends its early recognition and probable control. At the present time we have several more or less reliable methods of diagnosing glanders. As I remember them, these methods have been revealed in about the following order: First, diagnosis by clinical symptoms and the macroscopic and microscopic study of lesions; second, auto-inoculation; third, the inoculation of the guinea pig, producing orchitis with chancroid lesion; fourth, the anaphylactic reaction following the injection of mallein; fifth, the agglutination method (Widal reaction), which means briefly, clumping or agglutination caused by a chemic substance in the germ called agglutinin with another chemic substance in the serum called agglutininogen; sixth, the discovery of precipitinogen formation in the blood, stimulated by precipitin contained in the product of the germ; seventh, the Wasserman reaction, or fixation of the complement. Of these several methods, representing the highest degree of technical laboratory research, it is to be hoped that a practical and reliable method has been found for the certain diagnosis of glanders in all stages and under all conditions.

Statements have been made in newspapers and magazines, and recently in one or two scientific journals, assuming that there might be a possible relation between pelagra of the horse and the same disease in man. Having been a close observer of diseases of the horse for several years, and questioning the reality of such a disease in the horse, effort was made to trace

the authority for this assumption, but without success. To assume that poisoning of the horse by pathogenic fungi or the toxins of any organism associated with food simulates pelagra in the human is going farther, it seems, than the profession is willing to go at this time.

Dr. B. F. Kaupp reports the presence of two forms of the so-called white diarrhoea of chickens in the middle west; the bacillary white diarrhoea caused by bacterium pullorum, and the coccidian white diarrhoea due to coccidium tennellum. Both of these organisms have been isolated and both types of the disease studied.

In the realm of toxic herbage very little has been done of late aside from the naming and identification of plants which have been suspected, by observation, of being poisonous. The loss of live stock from poisonous plants, especially on the open ranges of the west, is very heavy. Several species of the so-called "loco" weeds are proven to be poisonous to horses, cattle and sheep, but the identification of the toxic principle remains a mystery and a satisfactory remedy, as well as a practical solution of the problem, has not been found. Larkspur (delphinium) continues unchecked to exact an annual toll of several millions of dollars in live stock (mostly cattle) in the mountainous districts. Species of cicuta, zygadenus, lupinus, the leaves of wild cherry, cane and Kaffir corn, and many others are poisoning animals at their own particular season of the year. The Wyoming experiment station is investigating the woody aster and its disastrous effect upon sheep. The loss from poisonous plants, in the aggregate, runs into millions of dollars every year, and its economic importance and scientific interest should appeal for a wider and more persistent investigation.

An address like this that did not make mention of the splendid achievements and the far-reaching influence of the United States Bureau of Animal Industry and the Canadian Health of Animals Branch would certainly be doing a gross injustice to these organizations. These governmental departments have won the confidence of the members of this association, the people of this continent and throughout the world, by their untiring devotion to the cause of conserving the animal wealth and protecting the public health.

A retrospect of fifty years in sanitary science affords us much satisfaction and much to be proud of, but the work is only fairly started. When we think of what has been accomplished in the

knowledge and mastery of yellow fever, cholera, bubonic plague, Texas fever, hookworm disease, diphtheria, anthrax, hog cholera, in surgery and in prophylaxis and curative medicine, we feel confident that no other branch of science has done so much for mankind, and while the world is coldly appreciative, the reward must come essentially in the satisfaction of achievements wrought in the cause of humanity.

The greatest problem of all, however, continues to baffle us. We knew the cause of tuberculosis; we know how to detect it in animals; we have an ample knowledge of its extent, its stupendous economic significance and the terrible tax it levies on human life. With a fair knowledge of what ought to be done, and with much earnestness and fixedness of purpose, we are still hesitating and in confusion, waiting for some genius who can evolve a plan of campaign which will afford some hope of final success. Every plan suggested has met with obstacles. We have tried legislation, but the people are not ready to co-operate. Must we in the light of our present knowledge and inability to perform, witness the terrible destruction from this disease indefinitely? Until we are ready to pave the way by recommending a feasible and systematic plan of campaign against it, we cannot justly claim the indifference of the people as sufficient cause for inaction. Until the public are aroused from their lethargy and come to a greater appreciation of its importance, we cannot expect that the selfish opposition will be removed. Let the campaign of education go on through every known agency and every member of this association consider it his moral duty to proclaim, by voice and pen, the gospel of co-operation in fighting this arch enemy of animal life. Members of tuberculosis commission, we are expecting much from you, at the same time we fully appreciate the size of the task you have in hand. Your splendid report one year ago helped to clear the horizon and direct our progress. Possibly you can help us now more by recommending a practical plan for united effort than you can by technical research.

I scarcely know what to say about matriculation requirements and a uniform degree. You know that these subjects are very close to my heart and that I consider them paramount, otherwise I would not for the last three years have always been found "harping on one string." I have not the time again to take up a review of these subjects. Since our last meeting there has been much discussion along these lines; and in the AMERICAN VETER-

INARY REVIEW, have appeared two notable articles, one by Dr. D. Arthur Hughes and the other by Dr. Olof Schwarzkopf, each apparently assuming that the two problems are so intimately associated as to be practically inseparable, but at the same time giving most of their attention to the problem of a uniform degree. After reading these very careful and exhaustive discussions of the subject one can scarcely fail to be impressed with the absurdity of our present position and the predicament in which we find ourselves. Gentlemen, the ease with which we pave the way for men to enter this learned profession, and then reward them with a multiplicity of easily earned titles, lowers our standing with other professions, lowers the appreciation of our graduates for such titles, and has a far-reaching demoralizing influence both in the profession and out. In the matter of higher matriculation standards for our veterinary colleges, there is a commercial consideration which makes it difficult; but gentlemen, there is a way of solving this perplexing problem without great material injury to anyone, and there is only one basis upon which it can be satisfactorily adjusted, and that is, "the greatest good to the greatest number." I do not believe that there is a person within the sound of my voice that does not in his heart believe in higher standards and educational righteousness. I am equally confident that all will agree that the weakest link in our educational chain is matriculation requirements. Then why not advance the requirements for matriculation by easy stages and not take the chance of doing any school great material injury by exacting the maximum of high school graduation, or because this appears revolutionary and conflicts with private interest, adopt the alternative, as we have in the past, and do nothing. It is a deplorable fact that so many men knocking at the doors of our veterinary colleges have not the basic training which in any manner fits them for a professional course. Some of these applicants seem to be possessed with the one idea of "serving their time," hoping at the end to obtain the doctor's degree which will entitle them to practice the art of veterinary craftsmanship. In such cases, education for its own sake, for a richer and more abundant life, does not appeal. It would seem that it is now time that we assumed an attitude which will definitely determine whether we stand for the profession of veterinary medicine or the business of veterinary medicine. While this perverted and deplorable conception of the true value of an education exists, students will naturally rush to schools where the course of study

is short and entrance conditions are easy. Were these schools to advance their entrance requirements to five unit credits, then other schools of medium requirements would feel justified in raising their standards proportionately, and the relative conditions which appeal for students would not be altered materially.

In order that a college may enjoy the retiring benefits of the Carnegie Foundation, it must not only require fourteen unit credits from a standard high school, but it must prove its educational righteousness in performance as well as in advertised requirements. In the third annual report of the Carnegie Foundation for the Advancement of Teaching I find the following: "The purpose of the Carnegie Foundation is to further as far as possible the cause of educational unity. It cannot therefore have one standard for college entrance in New York and Iowa and another in North Carolina and Texas. Under any conception of educational organization the college should rest on the standard high school, and when that standard is uniform throughout the nation then we hope to move the point of admission to colleges up or down as may seem wise." From the same report I find the following admonition: "Educational righteousness begins in honesty and sincerity and no system of insincere requirements for admission can be considered as an educational gain." "There is no method by which the Foundation can be sure of the impartial enforcement of the published entrance requirements of a given college except by a detailed examination of the actual practice in the admission of students, and this will be made in the case of institutions admitted to the accepted list."

When I think of what the requirements are for recognition by the Carnegie Foundation, of how many colleges are accepted by them, of how far we, in several instances, fall short of these requirements, of how we as a learned profession seek public recognition upon our merit, of how in the midst of these high educational standards we hesitate to adopt a minimum requirement of even five high school credits, I wonder whether we have not, like the man of fiction, gone into a twenty-year slumber.

The great things of the world have been achieved by those individuals who had faith in themselves, and who had a problem. As an association we should have the faith in our cause and the pride in our chosen profession which will at all times keep us alive to the progress of the world. To fail to keep step with the onward march of progress means to fall back in the procession, with discredit and dishonor. Surely there is no nobler

calling than ours, yet we are constantly humiliated by being ignored in matters where we should be an authority, and our profession is the victim of odious inferences as to the dignity of our true mission. For these things we have no one to blame but ourselves. The business of making a trade out of our profession remained too long. Progress is a law of nature and established precedent obstructs the way.

Gentlemen, this is the most vitally important problem affecting the welfare of our beloved profession to-day; our pedagogic machinery is creaking from dearth of the oil of preparedness and commercialism will not release the brakes. May we not delay action longer, but at this meeting do something that will, in a slight measure at least, indicate that we are alive to the progress of the times in everything pertaining to education?

In the matter of a uniform degree for veterinary colleges the difficulties in the way are not so great and seem to melt away by careful analysis. This may not be so true of Canada as the United States, and while one degree for each of these countries would be an improvement over present conditions, those who read the "handwriting on the wall" are looking forward to an international uniform degree. The Orient represents the one extreme of conservatism never having until recently conferred the doctorate degree on veterinarians. On this continent we have gone to the other extreme of giving away degrees, seemingly forgetting that a diploma is worth just what it cost in study, and not in money, to the recipient and in service to the public. As a result of this folly our graduates are not generally recognized in the Orient, and we receive their graduates with open arms. Germany and Prussia will now confer the doctorate degree upon their graduates in veterinary medicine. France and other European countries will naturally follow. Now, let us show them that we are alive to this world movement by doing our part. The degree of Doctor of Veterinary Medicine is the particular degree which seems to meet with more general approval. It is substantially the degree adopted in Germany and Prussia (*Doctor Medicinas Veterinariæ*; *Dr. Med. Vet.*), has recently been adopted by the Federation of American Veterinary Colleges, has been approved by the Missouri Valley Veterinary Medical Association, and will be up at this meeting for consideration. The University of Toronto confers two degrees, B.V.Sc. and D.V.Sc., the latter to be obtained upon proof of a higher educational standard and prolonged professional study. Two degrees

in veterinary science corresponding to the degree of Bachelor of Science (B.Sc.) and Master of Science (M.Sc.) is reasonable and commendatory, but had not better claim our attention for some future time.

It is not too early, however, to consider the proposition of conferring honorary degrees upon the worthy members of our profession. We have in our American veterinary profession several men who in faithfulness, professional attainment and scientific achievement are worthy, and why should we not honor them while they are living? Let us not keep the alabaster boxes of our love and esteem sealed until our friends are dead, rather let us anoint them before their burial. Post-mortem kindness does not cheer the troubled spirit, and flowers on the coffin cast no fragrance backwards over life's weary way.

Gentlemen, I must appeal to you in another matter. There is a half-heartedness, a lukewarmness in our attitude towards the ignoble and pitiable plight of the veterinarians in the United States Army. As long as the people of the United States, and particularly those who cultivate the amenities, gentility, social grace, and treasure the best elements in character, know that the veterinarian in the army has no official recognition, whatever be his intellectual, moral or social qualities, just so long will there be a stigma upon us, and just so long will we be forbidden recognition on terms of equality with members of other professions. We must have justice in this matter, and to accomplish this we must still further prove our worthiness and command an undeniable respect by getting together on a higher educational basis and by making this organization a power that cannot consistently be ignored. Let us keep up the fight and appropriate more money, if necessary, that we may keep our representatives knocking at the doors of Congress, presenting our claims, and refusing to be denied our just recognition.

Gentlemen, these problems will be before you at this meeting and will claim your candid and serious consideration. We are bound together by a moral obligation, which among men of our standing should be looked upon as even more sacred than a legal compact.

May we make this, our second meeting in Canada, and at the seat of the pioneer college of America, memorable by good fellowship and substantial achievements. Thought is becoming more powerful and power is becoming more thoughtful, and men are everywhere learning the need of co-operation; they are beginning

to sing in chorus the great solos of the world and to appreciate as never before that mutual helpfulness makes for mutual happiness and success. The restless spirit of the times should cause no pessimistic apprehensions; it is simply the result of breaking away from old lines of thought and the awakening of the people to independent and individual thought. It is the extension of the freedom of thought made conspicuous by Darwin and others; the people thinking for themselves instead of blindly following the beaten track of others. Ideals are being reconstructed, not destroyed, and along with this independence of thought is a growing desire to co-operate, to be kind and mutually helpful. (Applause.)

At the conclusion of his address, President Glover introduced the Hon. George R. Geary, Mayor of the City of Toronto.

MAYOR GEARY'S ADDRESS.

MR. PRESIDENT, AND LADIES AND GENTLEMEN—It was my good fortune this morning to be a little late, because it gave me the opportunity of hearing the remarks of your president, thus giving me some idea of the basis of this organization and of the spirit in which the organization desires to progress and to make of itself something better even than it is at the present time, or as it was, I imagine, in its original state. We in Toronto have been particularly attached to this profession of yours for a great many years. I think our college is one of the oldest of all the veterinary colleges. Perhaps the oldest. I do not know, but I know that we could always depend upon our university for turning out good men, well-trained men in the veterinary profession. The veterinary department is now one of the well-qualified departments of our university activity, and it has attracted to its courses some pretty sturdy fellows, I can tell you. I think, probably, and at all events, the backbone of the football team has usually come from the veterinary college. Dr. Andrew Smith, who was actively connected with the department until within the last three or four years, was probably the most respected citizen of Toronto, and was one of the very finest men that we have ever had in the city. He commanded both respect and admiration, and under his care and management the veterinary college attained a very high stand and maintained it through many years.

Mr. Duff, the Minister of Agriculture, I believe, has given you a welcome to the Province of Ontario, and has told you some-

thing of the connection of the veterinary school with the university. The school of veterinary science, as I understand it, is affiliated with the university or college, and it is now a part of the university. The University of Toronto is certainly a university that they should be proud to be affiliated with. The University of Toronto is a state institution, and I think that all visitors to this city, and this convention, will feel that their professional interests are being taken good care of inasmuch as the school in which you are more particularly interested is affiliated with the University of Toronto, and thus commands the attention and assistance of the Canadian Government and the active support of the Province of Ontario.

Some time ago, some months ago I believe it was, Dr. Grange of this city, who has been very active in your behalf, intimated that possibly we could get this great convention to come to visit us. He went to San Francisco. He was armed with our invitation, and with our authority to say to you all that he might wish to say to you in order to induce you to come. We were indeed very much pleased, and in fact more than pleased, when he reported that he was able to say that you had decided to do us the honor of holding your next annual convention in this city. I assure you that we were delighted to receive that information, and are glad indeed that you are with us. Many of you are from the United States, with which we are at the present moment engaged in discussion regarding some matters that have to do with trade relations between Canada and the United States. (Laughter.) I do not think that I need enter into a discussion of that particular matter any more than to say that no matter whether the policy of "get-together" or "don't-get-together" prevails we can readily believe that for all time to come there will be no doubt as to the beneficial effect of the policy of reciprocity in friendship and affection between the two peoples (applause), and that although our relations will, in all probability, remain as they are to-day, we can count, for all time to come, no matter what may be the result of these agitations which are now going on, upon a continuance of the policy of hospitality and kindness, and beautiful respect and admiration will always be of the friendliest and kindest nature between us. (Applause.)

The city of Toronto gets its name from being the meeting place of the tribes of Indians who formerly inhabited this portion of the country. I understand that in the days before there was very much business done here that they had conventions of gentlemen decorated in all of the insignia of war that their limited

knowledge enabled them to put upon themselves, and that they came here not only for purposes of that kind, but on other occasions that they came here for peaceful purposes and for social enjoyment. That good old custom has been continued, and today Toronto is the scene of many conventions of different societies. We are always glad to see them, and just as often as they go we wish that they may soon come back. We look forward with anticipation and pleasure to having you come back, and we shall look back to your visit and regret that you have not been able to come before, and shall look forward with anticipation and with the hope that at some future time you may again do us the honor of making Toronto the place for holding your annual meeting. The citizens of Toronto, I know, are more than glad to have their executive officer appear and greet your convention, and if I were in possession of any of the old customs or materials so that I could present in some concrete form what was called in other days the freedom of the city, I assure you I would do it very gladly indeed. I can, however, go this far and say to you that there may be some things that you will see that you will like, and you may use your discretion about taking them. At all events it will be very likely that if you do so you will be given every opportunity of having it overlooked. (Laughter.) I know that conventions composed of men in one of the learned professions are not conventions to which perhaps the ordinary forms of entertainment appeal. I think, however, that we will be able to show you that we have a good town here and hope that you will believe us in the statement that it is going to be a very great town, and perhaps the greatest town on the continent of North America, as the years go by.

Now, I hope the ladies and gentlemen who are here will have a very pleasant time in the city, that good results will come from your labors in the interests of your profession, in the general results achieved by the convention, and I hope to see this great profession still further advanced as the result of your efforts, that your interests may be safeguarded and may be advanced materially and in character, and this association will do a great deal, I am quite sure to place the profession of veterinary medicine in the position to which it is entitled, and which I think it has, in a great many directions, already attained in a very marked form. Some of our very best citizens are in your ranks, of whom we are very proud, and I am sure that this very representative gathering is entitled to our respect as it surely is to our warmest welcome to Ontario and Canada. (Applause.)

President Glover then requested Dr. V. A. Moore to respond to the addresses of welcome given by the Minister of Agriculture and the Mayor.

DR. MOORE'S RESPONSE.

MR. PRESIDENT, MR. MINISTER OF AGRICULTURE, MR. MAYOR, LADIES AND GENTLEMEN—On behalf of the members of the American Veterinary Medical Association I have the privilege and the honor of extending to you, to your government and to the citizens of Toronto our sincere thanks for your most cordial and gracious welcome. In reply to your timely words of appreciation of the veterinary profession I wish to say that its members here are exceedingly grateful. This is the youngest in America of the so-called learned professions. Because of this it has been and still is confronted by many perplexing problems, in carving its place of highest usefulness in these great countries. It has grown from the few men who gathered around John Bustied and Alexander Liautard in New York, and a half dozen men who surrounded Andrew Smith in Toronto, more than half a century ago, to a profession numbering many, many thousands. In the beginning it dealt simply in treating the sick and the injured. To-day in addition to its earlier duties it looks after the many and complicated tasks of preventing epizootics and safeguarding the human family from the plagues that come to it through the dumb creation.

We are gathered here in the spirit of true reciprocity. We have come from nearly if not every state in the Union, from across the seas and from nearly if not every province in this great country of yours. We have come with treasures consisting of tried and carefully correlated experience in the human effort to relieve suffering and to control epizootics and other diseases. In the marts of commerce such treasures would bring the highest price, but these men have come, some great distances, each to give to others that which he possesses and to take in exchange from the experience of others that which he can assimilate and apply. Where among statesmen, philosophers, or in the realm of commerce can be found a better example of genuine reciprocity?

It is very fitting that this association should meet from time to time in your city. Up to 1905, more than half of the veterinarians in the United States and Canada received their professional training in Toronto, at the school which is held in

such high esteem by so many of the profession. Toronto, therefore, is the widest known center for veterinary education in America. This association brings its greetings and congratulations that the school established by private enterprise has become affiliated with a great university, where it will receive that stimulus for better and more efficient work which comes only with the introduction of the true university spirit. In earlier times this was not thought to be necessary for the veterinarians, but the hour has come when the mysteries of the laws of nature that have been revealed in the many causes of disease, the specific reaction of animal tissues to irritants, the intricate interlacing of susceptibility and immunity, together with the delicate balancing between normal and abnormal physiology, demand an extent of scientific training and mental discipline for the veterinarian not excelled by any of the other professions. For this reason we rejoice in the plans for the future scientific development of our host, the time-honored Ontario Veterinary College.

As the members of this association gather from year to year there is a growing appreciation of the duties, the responsibilities and the obligations of the veterinarian as a professional man. Its members have grown out of petty jealousies and selfish interests and assemble at these great annual gatherings for the purpose not only of acquiring information by which to increase their efficiency as practitioners of medicine and surgery, but also to ascertain more clearly those things which they can do to enhance their value as loyal citizens in this great warfare against disease.

With these few brief statements as to the kind of men we are, and the purpose for which we are here, I wish to extend to you and to the citizens of Toronto interested in this work a most cordial invitation to attend our deliberations and to assure yourselves of the real spirit, the purpose, and the genuineness of the modern veterinarian. I again assure you of our appreciation of your welcome and congratulate the association on the privilege of meeting under such delightful auspices.

THE ATTENDANCE.

The attendance at the Toronto meeting exceeded that of any previous occasion. Space will not permit of its publication in the present issue, but it will appear in the succeeding issue.

New Members.

ARKANSAS—Stanford, John Fred, M.D.V., Fayetteville, Ark. (McKillip Veterinary College, 1908); voucher, R. R. Dinwiddie.

CALIFORNIA—Almeida, Anton S., D.V.S., Dixon, Cal. (San Francisco Veterinary College, 1909); vouchers, C. M. Haring and A. R. Ward. Ast, Jacob F., D.V.S., San Francisco, Cal. (San Francisco Veterinary College, 1907); vouchers, Charles Keane and David F. Fox. Bergh, Hennig E., D.V.S., Suisun, Cal. (San Francisco Veterinary College, 1909); vouchers, Charles Keane and David F. Fox. Boyd, James, D.V.S., Milpitas, Cal. (San Francisco Veterinary College, 1907); vouchers, Charles Keane and David F. Fox. Brown, Charles W., D.V.S., McCloud, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and W. E. D. Morrison. Caldwell, Wm. A., D.V.S., Edgewood, Cal. (San Francisco Veterinary College, 1908); vouchers, Charles Keane and David F. Fox. Cram, V. E., D.V.S., Calexico, Cal. (Colorado State College, Veterinary Department, 1910); vouchers, David F. Fox and W. E. D. Morrison. Fallon, Edward J., D.V.S., San Francisco, Cal. (San Francisco Veterinary College, 1908); vouchers, Charles Keane and David F. Fox. Gordon, George, D.V.S., Hanford, Cal. (San Francisco Veterinary College, 1904); vouchers, Charles Keane and David F. Fox. Haney, William F., D.V.S., Modesto, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and David F. Fox. Hogarty, John J., D.V.S., Oakland, Cal. (San Francisco Veterinary College, 1900); vouchers, R. A. Archibald and Charles Keane. Iverson, John P., D.V.S., Sacramento, Cal. (San Francisco Veterinary College, 1906); vouchers, Charles Keane and David F. Fox. Koch, Julius, D.V.S., Los Angeles, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and David F. Fox. Lang, August R., D.V.S., Porterville, Cal. (San Francisco Veterinary College, 1909); vouchers, Charles Keane and R. A. Archibald. Longley, Otis A., D.V.S., Fresno, Cal. (San Francisco Veterinary College, 1903); vouchers, Charles Keane and David F. Fox. McCarthy, Chas. F., D.V.S., San Francisco, Cal. (San Francisco Veterinary College, 1901); vouchers, Charles Keane and R. A. Archibald. Nielson, Norman, D.V.S., Cohisa, Cal. (San Francisco Veterinary College, 1903); vouchers, Charles Keane and David F. Fox. O'Rourke, Michael J., D.V.S., San Francisco,

Cal. (San Francisco Veterinary College, 1909); vouchers, Charles Keane and David F. Fox. Outhier, C. B., D.V.S., Salina, San Francisco, Cal. (San Francisco Veterinary College, 1902); vouchers, Charles Keane and R. A. Archibald. Petersen, Theo. J., D.V.S., Visalia, Cal. (San Francisco Veterinary College, 1902); vouchers, Charles Keane and David F. Fox. Price, Charles E., D.V.S., Santa Ana, Cal. (San Francisco Veterinary College, 1906); vouchers, Charles Keane and David F. Fox. Pullin, John H., D.V.S., Santa Ana, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and David F. Fox. Quinn, James E., D.V.S., Antioch, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and David F. Fox. Ramsey, Wm. J. C., D.V.S., Watsonville, Cal. (San Francisco Veterinary College, 1908); vouchers, Charles Keane and David F. Fox. Pace, John C., D.V.S., El Cintio, Cal. (Colorado State College, Veterinary Department, 1910); vouchers, W. E. D. Morrison and David F. Fox. Rey, George S., D.V.S., Visalia, Cal. (San Francisco Veterinary College, 1909); vouchers, Charles Keane and David F. Fox. Riordan, Wm. F., D.V.S., Gilroy, Cal. (San Francisco Veterinary College, 1906); vouchers, Charles Keane and Wm. M. MacKellar. Rosenberger, Guy W., D.V.S., Hanford, Cal. (San Francisco Veterinary College, 1906); vouchers, Wm. M. MacKellar and Arthur Paul. Small, Anthony W., D.V.S., Hayward, Cal. (San Francisco Veterinary College, 1910); vouchers, Charles Keane and David F. Fox. Struthers, Chas. E., D.V.S., Willows, Cal. (San Francisco Veterinary College, 1908); vouchers, Charles Keane and David F. Fox. Taylor, George C., D.V.S., Redding, Cal. (San Francisco Veterinary College, 1906); vouchers, Charles Keane and David F. Fox. Ward, George R., D.V.S., San Francisco, Cal. (San Francisco Veterinary College, 1904); vouchers, Charles Keane and David F. Fox.

COLORADO—Busman, V. S., M.D., Denver, Colo. (Ontario Veterinary College, 1895); vouchers, B. F. Kaupp and George H. Glover. Yard, Wm. W., D.V.S., Denver, Colo. (American Veterinary College, 1894); vouchers, George H. Glover and G. W. Dickey.

CONNECTICUT—Gilyard, Arthur T., D.V.M., Waterbury, Conn. (New York State Veterinary College, 1907); vouchers, G. W. Loveland and Thomas Bland. Keresey, Dennis R., B.V.Sc., Danbury, Conn. (Ontario Veterinary College, 1910); vouchers, Thomas Bland and G. W. Loveland. Todd, Robt. S., D.V.S.,

New Milford, Conn. (American Veterinary College, 1893); vouchers, G. W. Loveland and Thomas Bland.

DISTRICT OF COLUMBIA—Brett, George W., D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, E. C. Schroeder and John R. Mohler. Cotton, Wm. E., D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, E. C. Schroeder and John R. Mohler. Graybill, Harry W., D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, B. T. Woodward and Adolph Eichhorn. Hicks, Tunis, D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, B. T. Woodward and Adolph Eichhorn. Koon, George H., D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, B. T. Woodward and Adolph Eichhorn. Shore, Howard J., D.V.M., Washington, D. C. (George Washington University, Veterinary Department, 1911); vouchers, A. M. Farrington and John R. Mohler.

GEORGIA—Burson, Wm. M., D.V.M., Athens, Ga. (Cincinnati Veterinary College, 1907); vouchers, W. A. Scott and F. W. Jago.

IDAHO—Dickson, John, M.D.C., Boise, Idaho. (Chicago Veterinary College, 1910); vouchers, G. E. Noble and John H. Weber.

ILLINOIS—Alkire, Chas. N., M.D.C., Sidell, Ill. (Chicago Veterinary College, 1911); vouchers, Geo. B. Jones and L. A. Merillat. Andrade, John S., M.D.V., Morton, Ill. (McKillip Veterinary College, 1910); vouchers, M. H. McKillip and Chas. Frazier. Cant, Wm. J., M.D.C., Erie, Ill. (Chicago Veterinary College, 1909); vouchers, L. A. Merillat and A. H. Baker. Giltner, L. T., D.V.M., Chicago, Ill. (New York State Veterinary College, 1906); vouchers, Ward Giltner and Richard P. Lyman. Grutzman, Walter R., D.V.S., Fort Sheridan, Ill. (American Veterinary College, 1896); vouchers, Chester A. McKillip and D. Tencknick. Luzader, Roy A., M.D.C., Morrisonville, Ill. (Chicago Veterinary College, 1910); vouchers, L. A. Merillat and A. H. Baker. Smith, A. W., V.S., Farmer City, Ill. (Ontario Veterinary College, 1888); vouchers, L. A. Merillat and A. H. Baker.

INDIANA—Garside, Peter, M.D.C., Bourbon, Ind. (Chicago Veterinary College, 1910); vouchers, J. W. Klotz and Geo. H. Roberts. Hart, John P., M.D.V., Winchester, Ind. (McKillip

Veterinary College, 1907); vouchers, J. W. Klotz and Geo. H. Roberts. Hidey, John L., V.S., Fortville, Ind. (Indiana Veterinary College, 1903); vouchers, W. B. Craig and Geo. H. Roberts. Langtry, Walter, V.S., Fort Wayne, Ind. (Ontario Veterinary College, 1877); vouchers, J. W. Klotz and Geo. H. Roberts. Marvel, Alexander L., V.S., Owenville, Ind. (Indiana Veterinary College, 1904); vouchers, J. W. Klotz and Geo. H. Roberts. Nelson, Amos F., V.S., M.D.C., Lebanon, Ind. (Indiana Veterinary College, 1901—Chicago Veterinary College, 1902); vouchers, J. W. Klotz and Geo. H. Roberts. Newgent, Ottaway C., D.V.M., Terre Haute, Ind. (Indiana Veterinary College, 1909); vouchers, J. W. Klotz and Geo. H. Roberts. Schwin, Payson E., V.S., Elkhart, Ind. (Ontario Veterinary College, 1888); vouchers, J. W. Klotz and Geo. H. Roberts. Weigel, Marion S., D.V.M., Cromwell, Ind. (Indiana Veterinary College, 1911); vouchers, J. W. Klotz and Geo. H. Roberts. Whitesell, Roy B., D.V.M., Lafayette, Ind. (Indiana Veterinary College, 1910); vouchers, J. W. Klotz and Geo. H. Roberts.

IOWA—Beavers, Glenn R., M.D.V., Arlington, Iowa. (McKillip Veterinary College, 1910); vouchers, J. E. Robertson and J. H. McLeod. Bennis, H. E., D.V.M., Ames, Iowa. (Iowa State College, 1908); vouchers, W. W. Dimock and C. H. Stange. Blanche, George W., D.V.M., Belle Plaine, Iowa. (Iowa State College, 1902); vouchers, J. H. McLeod and C. H. Stange. Bradley, Chas. A., M.D.C., Marion, Iowa. (Chicago Veterinary College, 1897); vouchers, J. W. Griffith and Hal C. Simpson. Deming, S. A., M.D.C., Ida Grove, Iowa. (Chicago Veterinary College, 1905); vouchers, C. J. Hinkley and Hal C. Simpson. Hazlet, Samuel K., M.D.C., Oelwein, Iowa. (Chicago Veterinary College, 1895); vouchers, Peter Malcolm and C. H. Stange. Readhead, William, V.S., Lenox, Iowa. (Ontario Veterinary College, 1895); vouchers, A. H. Quinn and S. H. Brennan. Stribling, Wm. E., M.D.C., Earlham, Iowa. (Chicago Veterinary College, 1907); vouchers, Ralph F. Knight and A. Ribard.

KANSAS—Hueben, Frank W., D.V.S., Kansas City, Kan. (Kansas City Veterinary College, 1910); vouchers, R. C. Moore and F. F. Brown. Logan, Edward A., B.S.A., D.V.M., Wamego, Kan. (Kansas State Agricultural College); vouchers, F. S. Schoenleber and K. W. Stouder. McCoy, John E., D.V.M., Cawker City, Kan. (Kansas City Agricultural College, 1909); vouchers, F. S. Schoenleber and K. W. Stouder. Platt, Robert

M., D.V.M., Aetna, Kan. (Kansas State Agricultural College, 1910); vouchers, K. W. Stouder and F. S. Schoenleber.

KENTUCKY—Graham, Robert, D.V.M., Lexington, Ky. (Iowa State College, 1910); vouchers, C. J. Marshall and George H. Glover. Moody, Robert P., D.V.M., Maysville, Ky. (Indiana Veterinary College, 1911); (vouchers omitted from report).

LOUISIANA—Cambon, Frederick J., D.V.S., New Orleans, La. (Kansas City Veterinary College, 1911); vouchers, W. H. Dalrymple and H. G. Patterson. Moore, Hamlet, V.S., New Orleans, La. (Ontario Veterinary College, 1898); voucher, J. Arthur Goodwin (for investigation).

MARYLAND—McCarthy, Henry J., D.V.M., Laurel, Md. (George Washington University, 1911); vouchers, B. T. Woodward and Riley, Edward H., D.V.M., Bethesda, Md. (George Washington University, 1911); vouchers, E. C. Schroeder and John R. Mohler.

MASSACHUSETTS—Babbitt, Frank J., M.D.V., Lynn, Mass. (Harvard Veterinary School, 1897); vouchers, Daniel Emerson and Francis Abele, Jr. Miller, Frederick A., M.D.C., Fitchburg, Mass. (Chicago Veterinary College, 1908); vouchers, W. H. Dodge and H. D. Clark. Pugh, Wm. T., V.S., Southbridge, Mass. (Ontario Veterinary College, 1895); vouchers, Daniel Emerson and Francis Abele, Jr.

MICHIGAN—Armstrong, Walter N., V.S., Concord, Mich. (Ontario Veterinary College, 1894); vouchers, Harry E. States and Richard P. Lyman. Burkholder, Clinton E., D.V.S., Chief, Mich. (Kansas City Veterinary College, 1908); vouchers, J. S. Anderson and P. Juckniess. Carter, George H., V.S., Saginaw, Mich. (Ontario Veterinary College, 1888); voucher, Richard P. Lyman. Dauber, Chas. C., V.S., Sturgis, Mich. (Ontario Veterinary College, 1904); vouchers, Judson Black and Geo. W. Dunphy. Fischer, Herman C., D.V.M., Grand Rapids, Mich. (Grand Rapids Veterinary College, 1911); vouchers, H. L. Schuh and Robertson Muir. Smead, Morgan J., V.S., B.V.Sc., Port Huron, Mich. (University of Toronto, Veterinary Department, 1910); vouchers, S. Brenton and D. Cumming. MacDonald, R. W., V.S., Flint, Mich. (Ontario Veterinary College, 1896); vouchers, G. W. Dunphy and R. P. Lyman. Miller, John M., D.V.M., Grand Rapids, Mich. (Grand Rapids Veterinary College—Ohio State Veterinary College); vouchers, H. L. Schuh and Robertson Muir. Petty, Clarence C., V.S., Lake Odessa,

Mich. (Ontario Veterinary College, 1902); vouchers, George Waddle and Richard P. Lyman. Shevalier, Eugene D., V.S., Escanaba, Mich. (Ontario Veterinary College, 1890); vouchers, Richard P. Lyman and Frank W. Chamberlain.

MINNESOTA—Beach, Burr A., D.V.M., St. Paul, Minn. (Ohio State University, 1909); vouchers, M. H. Reynolds and John Spencer. Corwin, Willis T., D.V.S., Lake City, Minn. (Kansas City Veterinary College, 1911); vouchers, C. S. Shore and L. Hay. Flanary, Wm. F., B.V.Sc., St. Charles, Minn. (Ontario Veterinary College and University of Toronto, 1910); vouchers, J. P. Anderson and L. Hay. Kerner, Rudolph, V.S., Chatfield, Minn. (Ontario Veterinary College, 1896); vouchers, Edward L. Kalb and J. P. Anderson. Legenhausen, Adolph H., M.D.C., Jackson, Minn. (Chicago Veterinary College, 1910); vouchers, L. Hay and F. E. Palmer. Sigmond, Chas. J., V.S., Pipestown, Minn. (Ontario Veterinary College, 1893); vouchers, G. Ed. Leech and George McGilvray.

MISSISSIPPI—Aicher, E. H., D.V.S., Starkville, Miss. (Colorado State College, 1910); vouchers, Tait Butler and James Lewis. Edwards, Ira W., M.D.C., Vicksburg, Miss. (Chicago Veterinary College, 1911); vouchers, Will R. Edwards and James Lewis. Smith, George F., M.D.C., Vicksburg, Miss. (Chicago Veterinary College, 1911); vouchers, Will R. Edwards and James Lewis.

MONTANA—Dufrene, Alfred J., M.D.V., Glendive, Mont. (McKillip Veterinary College, 1910); vouchers, A. H. Cheney and M. E. Knowles.

NEBRASKA—Bacon, Richard M., M.D.C., Tilden, Neb. (Chicago Veterinary College, 1911); voucher, Chas. A. McKim. Boyd, John A., D.V.S., Mason City, Neb. (Kansas City Veterinary College, 1910); vouchers, A. Bostrom and J. S. Anderson. Cady, P. L., D.V.S., Fremont, Neb. (Kansas City Veterinary College, 1910); vouchers, Chas. A. McKim and J. S. Anderson. Cline, Gordon L., D.V.S., Western, Neb. (Kansas City Veterinary College, 1910); vouchers, Chas. A. McKim and L. P. Carstenson. Elliott, Chas. M., D.V.S., Seward, Neb. (Kansas City Veterinary College, 1908); vouchers, J. S. Anderson and S. Stewart. Hyland, Eugene H., D.V.S., Schuyler, Neb. (Kansas City Veterinary College, 1908); vouchers, Chas. A. McKim and L. P. Carstenson. Keehn, Wm. G., D.V.S., Gresham, Neb. (Kansas City Veterinary College, 1911); vouchers, Chas. A. McKim and J. S. Anderson. Meixel, Geo. A., D.V.S., Aurora,

Neb. (Kansas City Veterinary College, 1905); vouchers, Charles A. McKim and L. P. Carstenson. Munn, Albert A., V.S., Kearney, Neb. (Ontario Veterinary College, 1904); vouchers, Chas. A. McKim and John H. Hoylman. Rose, Thomas P., D.V.S., Gresham, Neb. (Kansas City Veterinary College, 1910); vouchers, Chas. A. McKim and L. P. Carstenson. Severin, John R., D.V.S., Wayne, Neb. (Kansas City Veterinary College, 1910); vouchers, Chas. A. McKim and L. P. Carstenson. Wertz, Sydney S., M.D.C., Kenesaw, Neb. (Chicago Veterinary College, 1909); vouchers, Edwin O. Odell and Richard Ebbitt. Norden, Carl J., D.V.S., Nebraska City, Neb. (Kansas City Veterinary College, 1911); vouchers, A. Bostrom and J. S. Anderson.

NEW JERSEY—Belloff, L. J., D.V.S., New Brunswick, N. J. (New York-American Veterinary College, 1902); vouchers, J. Payne Lowe and Wm. Herbert Lowe. Smith, George H., D.V.S., Hoboken, N. J. (New York University, Veterinary Department, 1903); vouchers, J. Payne Lowe and Thomas E. Smith.

NEW MEXICO—Corbin, E. A., M.D.C., Tucumcari, N. M. (Chicago Veterinary College, 1909); vouchers, W. A. Savage and F. H. Barr.

NEW YORK—Cady, Henry, D.V.S., Gloversville, N. Y. (American Veterinary College, 1887); vouchers, J. F. DeVine and W. G. Hollingworth. Comstock, David B., D.V.S., Albany, N. Y. (McGill University, 1891); vouchers, J. F. DeVine and J. G. Wills. Crawford, James E., D.V.S., Far Rockaway, N. Y. (New York-American Veterinary College, 1904); vouchers, R. W. Ellis and J. F. DeVine. Frederick, Harry, D.V.M., Suffern, N. Y. (New York State Veterinary College, 1910); vouchers, W. L. Williams and V. A. Moore. Greer, John, D.V.S., Saranac Lake, N. Y. (McGill University, 1896); vouchers, J. A. McCrank and J. F. DeVine. Kennedy, William W., V.S., Fulton, N. Y. (Ontario Veterinary College, 1890); vouchers, M. M. Poucher and W. L. Williams. Kingston, Richard H., D.V.S., New York City, N. Y. (New York-American Veterinary College, 1904); vouchers, R. W. Ellis and W. J. Coates. McCartney, John, D.V.M., Brooklyn, N. Y. (New York State Veterinary College, 1909); vouchers, E. B. Ackerman and George H. Berns. Moorhouse, Wm. B., D.V.S., Tarrytown, N. Y. (American Veterinary College, 1894); vouchers, W. J. Coates and R. W. Ellis. Nichols, Percival K., D.V.S., Port Richmond, N. Y. (American Veterinary College, 1896); vouch-

ers, E. B. Ackerman and John L. Halloran. Pearce, Chas. D., D.V.M., Owego, N. Y. (New York State Veterinary College, 1908); vouchers, J. F. DeVine and W. L. Williams. Rafter, Edward, V.S., Hamburg, N. Y. (Ontario Veterinary College, 1895); vouchers, Frank Hunt and W. S. Baker; Roig, Chester A., D.V.M., Poughkeepsie, N. Y. (New York State Veterinary College, 1910); vouchers, Otto Faust and Edward J. Nesbitt. Schlesinger, Alex., Jr., D.V.M., Whitney Point, N. Y. (New York State Veterinary College, 1910); vouchers, J. Payne Lowe and P. A. Fish. Sheldon, Thomas, D.V.M., Rhinebeck, N. Y. (New York State Veterinary College, 1907); vouchers, J. F. DeVine and J. G. Wills. Smith, William B., D.V.M., Arcade, N. Y. (New York State Veterinary College, 1906); vouchers, J. F. DeVine and J. G. Wills. Stone, Garry T., D.V.M., Norwich, N. Y. (New York State Veterinary College, 1900); vouchers, J. F. DeVine and W. L. Williams. Taylor, Chas. H., D.V.M., Niagara Falls, N. Y. (New York State Veterinary College, 1905); vouchers, V. A. Moore and W. L. Williams. Towner, Albert N., D.V.S., Brewster, N. Y. (New York-American Veterinary College, 1908); vouchers, F. W. Andrews and Robert W. Ellis.

NORTH CAROLINA—Chrisman, Wm. G., V.S., Raleigh, N. C. (Ontario Veterinary College, 1902); vouchers, N. S. Mayo and Geo. C. Faville.

NORTH DAKOTA—Anderson, F. J., V.S., Grand Forks, N. D. (Ontario Veterinary College, 1905); vouchers, W. F. Crewe and L. Van Es. Anderson, Herbert, V.S., Dickinson, N. D. (Ontario Veterinary College, 1906); vouchers, W. F. Crewe and L. Van Es. Chisholm, Jos. P., V.S., Lisbon, N. D. (Ontario Veterinary College, 1904); vouchers, W. F. Crewe and L. Van Es. Graff, Carl P. L., Dr., Rolla, N. D. (Royal Veterinary College, Copenhagen, Denmark, 1904); vouchers, W. F. Crewe and S. P. Smith. Harris, E. D., D.V.M. (State University, Veterinary Department, 1907) (name of state and vouchers not given in report). Jones, Albert C., D.V.S., High Point, N. C. (Kansas City Veterinary College, 1909); vouchers G. C. Roberts, Geo. H. Glover and C. J. Marshall. Krieger, Robt. E., M.D.C., Ray, N. D. (Chicago Veterinary College, 1906); vouchers, W. F. Crewe and E. J. Walsh. McDonnell, L. E., M.D.C., Hankinson, N. D. (Chicago Veterinary College, 1908); vouchers, W. F. Crewe and L. Van Es. McLain, John H., M.D.C., Inkster, N. D.

(Chicago Veterinary College, 1894); vouchers, W. F. Crewe and L. Van Es. Norton, Robert S., M.D.C., Velva, N. D. (Chicago Veterinary College, 1910); vouchers, W. F. Crewe and E. J. Walsh. Patton, Don W., D.V.M., Steele, N. D. (Veterinary Department, Iowa State College, 1893); vouchers, W. F. Crewe and L. Van Es. Schalk, Arthur F., D.V.M., Agricultural College, N. D. (Ohio State University, 1908); vouchers, L. Van Es and W. F. Crewe. Schneider, Ernest, M.D.C., Kulm, N. D. (Chicago Veterinary College, 1909); vouchers, W. F. Crewe and L. Van Es. Shigley, Ralph E., M.D.C., Kenmare, N. D. (Chicago Veterinary College, 1909); vouchers, W. F. Crewe and E. J. Walsh. Sims, Thomas, V.S., Bottineau, N. D. (Ontario Veterinary College, 1898); vouchers, W. F. Crewe and E. J. Walsh. Thompson, John B., M.D.C., Kenmare, N. D. (Chicago Veterinary College, 1910); vouchers, W. F. Crewe and E. J. Walsh. Van De Ewe, Jacob, M.D.C., Sherwood, N. D. (Chicago Veterinary College, 1910); vouchers, E. J. Walsh and W. F. Crewe. Westgate, Samuel S., V.S., M.D.V., Mott, N. D. (Ontario Veterinary College, 1906—McKillip Veterinary College, 1907); vouchers, W. F. Crewe and L. Van Es. Winsloe, J. A. H., V.S., Cooperstown, N. D. (Ontario Veterinary College, 1897); vouchers, W. F. Crewe and L. Van Es.

OHIO—Biddle, Glen, V.S., B.V.Sc., Wauseon, Ohio (Ontario Veterinary College and University of Toronto, 1910); vouchers, A. J. Kline and C. S. Bucher. Clark, Rees, D.V.M., Winchester, Ohio (Cincinnati Veterinary College, 1910); vouchers, F. R. Smythe and Louis P. Cook. Gemmill, A. D., V.S., Celina, Ohio (Ontario Veterinary College, 1892); vouchers, J. H. Blattenburg and Louis P. Cook. Hershey, Chas. E., V.S., Tiffin, Ohio (Ontario Veterinary College, 1906); vouchers, W. B. Washburn and John V. Newton. Hill, Robert C., V.S., West Alexandria, Ohio (Ontario Veterinary College, 1895); vouchers, Walter Shaw and Edgar H. Shepard. Jefferson, Jos. H., V.S., Chicago Jct., Ohio (Ontario Veterinary College, 1906); vouchers, H. Fulstow and W. B. Washburn. Severcool, Lucius A., V.S., Elyria, Ohio (Ontario Veterinary College, 1880); vouchers, E. H. Shepard and J. L. Farahger. Sisson, Septimus, S.B., V.S., Columbus, Ohio (Ontario Veterinary College, 1891); vouchers, J. H. McNeil and Arthur S. Cooley.

OREGON—Cavney, Stephen J., D.V.S., Portland, Ore. (San Francisco Veterinary College, 1902); vouchers, Charles Keane

and P. H. Browning. Johnson, Albert C., D.V.S., Portland, Ore. (San Francisco Veterinary College, 1909); vouchers, Henry Munn and W. Dean Wright. Mitchell, George C., M.D.C., Klamath Falls, Ore. (Chicago Veterinary College, 1909); vouchers, W. Dean Wright and Wm. Lytle. Wright, Chas. C., M.D.C., Lebanon, Ore. (Chicago Veterinary College, 1910); vouchers, W. Dean Wright and J. F. Morel.

PENNSYLVANIA—Borneman, Harris S., V.S., Norristown, Pa. (Ontario Veterinary College, 1882); vouchers, H. Preston Hoskins and C. J. Marshall; Bruner, S. E., V.M.D., Greensburg, Pa. (Veterinary Department, University of Pennsylvania, 1906); vouchers, H. Preston Hoskins and C. J. Marshall. Cahill, Edward A., V.M.D., Canonsburg, Pa. (University of Pennsylvania, Veterinary Department, 1909); vouchers, C. J. Marshall and H. Preston Hoskins. Cecil, Joseph D., V.M.D., Philadelphia, Pa. (University of Pennsylvania, Veterinary Department, 1910); vouchers, C. J. Marshall and H. Preston Hoskins. Cole, Alonzo B., B.V.Sc., Montrose, Pa. (Ontario Veterinary College, 1910); vouchers, C. J. Marshall and H. Preston Hoskins. Fetherolf, G. R., V.S., Reading, Pa. (Ontario Veterinary College, 1894); vouchers, J. W. Sallade and Otto G. Noack. Gimper, Wm. S., V.M.D., Philadelphia, Pa. (University of Pennsylvania, Veterinary Department, 1910); vouchers, W. J. Lentz and C. J. Marshall. Haines, W. Albertson, V.M.D., Bristol, Pa. (University of Pennsylvania, Veterinary Department, 1907); vouchers, H. Preston Hoskins and C. J. Marshall. Kann, R. L., V.S., M.D.V., Mechanicsburg, Pa. (Ontario Veterinary College, 1895; McKillip Veterinary College, 1901); vouchers, C. J. Marshall and H. Preston Hoskins. Keelor, Allen Z., V.S., Telford, Pa. (Ontario Veterinary College, 1891); vouchers, C. J. Marshall and H. Preston Hoskins. Keelor, J. Rein, V.S., Harleysville, Pa. (Ontario Veterinary College, 1883); vouchers, S. E. Weber and C. J. Marshall. Kuhn, J. M., V.S., Mercersburg, Pa. (Ontario Veterinary College, 1889); vouchers, C. J. Marshall and H. Preston Hoskins. McAnulty, John F., V.M.D., Philadelphia, Pa. (Veterinary Department, University of Pennsylvania, 1898); vouchers, C. J. Marshall and H. Preston Hoskins. McCarthy, F. H., V.S., Pottsville, Pa. (Ontario Veterinary College, 1892); vouchers, J. W. Sallade and I. C. Newhard. McCloskey, James A., V.M.D., Philadelphia, Pa. (Veterinary Department, University of Pennsylvania, 1908); vouchers, W. J. Lentz and C. J. Mar-

shall. McDonough, John F., V.M.D., Philadelphia, Pa. (Veterinary Department, University of Pennsylvania, 1910); vouchers, W. L. Rhoads and H. Preston Hoskins. Marshall, Leslie G., V.M.D., Towanda, Pa. (Veterinary Department, University of Pennsylvania, 1904); vouchers, Ernest C. Dingley and W. J. Lentz. Mattson, Wm. H., V.M.D., Chester Heights, Pa. (Veterinary Department, University of Pennsylvania, 1889); vouchers, H. Preston Hoskins and C. J. Marshall. Meyer, Karl F., V.M.D., Philadelphia, Pa. (Berne, Munich, Zurich, Vienna, 1908); vouchers, C. J. Marshall and H. Preston Hoskins. Mitchell, Adrian J., Sr., V.S., Erie, Pa. (Ontario Veterinary College, 1885); vouchers, C. J. Marshall and H. Preston Hoskins. Mock, William, V.S., Easton, Pa. (Ontario Veterinary College, 1892); vouchers, C. J. Marshall and H. Preston Hoskins. Moyer, Calvin W., V.M.D., Sunbury, Pa. (Veterinary Department, University of Pennsylvania, 1911); vouchers, Louis A. Klein and H. Preston Hoskins. Moyer, Vincent C., V.M.D., Philadelphia, Pa. (Veterinary Department, University of Pennsylvania); vouchers, C. J. Marshall and W. J. Lentz. Nice, Frank K., D.V.S., Philadelphia, Pa. (American Veterinary College, 1892); vouchers, Harry B. Cox and W. Horace Hoskins. Paxson, Wm. Henry, V.M.D., Marietta, Pa. (Veterinary Department, University of Pennsylvania, 1905); vouchers, S. H. Gilliland and E. L. Cornman. Rentschler, Mandon D., M.D.V., Punxsutawney, Pa. (McKillip Veterinary College, 1909); vouchers, C. J. Marshall and H. Preston Hoskins. Staley, Raymon M., V.M.D., New Cumberland, Pa. (Veterinary Department, University of Pennsylvania, 1906); vouchers, S. H. Gilliland and C. J. Marshall. Witmer, Hervey W., V.S., Shippensburg, Pa. (Ontaria Veterinary College, 1895); vouchers, C. J. Marshall and H. Preston Hoskins.

RHODE ISLAND—Smith, Herbert M., M.D.V., Providence, R. I. (Harvard Veterinary School, 1886); vouchers, John S. Pollard and T. E. Robinson.

SOUTH DAKOTA—Embree, Warren J., M.D.C., Aberdeen, S. D. (Chicago Veterinary College, 1910); vouchers, S. W. Allen and C. McDowell. McCain, Earl A., M.D.V., Gregory, S. D. (McKillip Veterinary College, 1911); vouchers, J. T. McGilvray and S. W. Allen. Venzke, Harry E., M.D.V., Pierre, S. D. (McKillip Veterinary College, 1911); vouchers, S. E. Cosford and S. W. Allen.

TEXAS—Foster, Allen A., D.V.S., Marshall, Tex. (Kansas City Veterinary College, 1910); vouchers, Chas. D. Folse and W. A. Knight.

UTAH—Egbert, Arch., D.V.M., Logan, Utah. (Ohio State University, 1911); vouchers, H. J. Frederick and John Ernst. Halton, John H., D.V.S., Salt Lake City, Utah (San Francisco Veterinary College, 1903); vouchers, A. D. Melvin and R. P. Lyman. Nebeker, Shirley, D.V.S., Lake Town, Utah (Kansas City Veterinary College, 1911); vouchers, H. J. Frederick and John Ernst.

VERMONT—Farmer, Albion O., D.V.M., Island Pond, Vt. (Ohio State College, 1911); voucher, J. H. McNeil.

VIRGINIA—Neff, S. C., V.S., Staunton, Va. (Ontario Veterinary College, 1901); vouchers, R. R. Clarke and H. Bannister. Will, Evan J., V.S., Harrisonburg, Va. (Ontario Veterinary College, 1896); vouchers, R. R. Clarke and H. Bannister.

WEST VIRGINIA—Langdon, Harry B., V.S., Charlestown, W. Va. (Ontario Veterinary College, 1911); vouchers, G. W. Dunphy and S. Brenton.

WISCONSIN—Benson, Eugene R., M.D.C., Superior, Wis. (Chicago Veterinary College, 1910); vouchers, S. E. Burnham and J. G. Harris. Bryant, Albert E., V.S., Menomonie, Wis. (Ontario Veterinary College, 1893); vouchers, W. G. Clark and D. B. Clark. Clarke, Burnett L., M.D.C., Monticello, Wis. (Chicago Veterinary College, 1895); vouchers, R. S. Heer and W. G. Clark. Evans, Christman E., D.V.S., Racine, Wis. (American Veterinary College, 1883); vouchers, W. G. Clark and F. W. B. Achen. Fabian, Arthur E. H., M.D.C., Lake Geneva, Wis. (Chicago Veterinary College, 1908); vouchers, F. W. B. Achen and W. G. Clark. Finkle, Ray C., M.D.C., Seymour, Wis. (Chicago Veterinary College, 1910); vouchers, J. P. West and W. A. Wolcott. Kickbusch, Frank A., M.D.V., Marinette, Wis. (McKillip Veterinary College, 1904); vouchers, W. G. Clark and S. J. Walkley. Kinyon, B. F., D.V.S., Ladysmith, Wis. (Chicago Veterinary College, 1891); vouchers, W. G. Clark and F. G. Neilson. Madson, William, M.D.C., Peshtigo, Wis. (Chicago Veterinary College, 1911); vouchers, W. G. Clark and J. P. West. Wrigglesworth, Thomas, V.S., Eau Claire, Wis. (Ontario Veterinary College, 1882); vouchers, W. G. Clark and D. B. Clark.

ALBERTA, CANADA—Caldwell, Jos. H., V.S., Edmonton, Alta., Canada (Ontario Veterinary College, 1907—McKillip

Veterinary College, 1908); vouchers, J. C. Hargrave and A. M. McKay. Watson, Edward A., V.S., Lithbridge, Alta., Canada (Ontario Veterinary College, 1904); vouchers, J. C. Hargrave and D. Warnock.

MANITOBA, CANADA—Bescoby, Bernard A., B.V.Sc., Winnipeg, Man., Canada (Ontario Veterinary College, 1910); vouchers, C. D. McGilvray and F. Torrance. Coxe, S. S., V.S., Brandon, Man., Canada (Ontario Veterinary College, 1894); vouchers, F. Torrance and W. Hilton. Hilliard, Wm. A., D.V.Sc., Winnipeg, Man., Canada (McGill University, 1897); vouchers, W. Hilton and F. Torrance. Irwin, Ivan B., V.S., Stonewall, Man., Canada (Ontario Veterinary College, 1911); vouchers, F. Torrance and C. D. McGilvray. Pomfret, Henry, M. D. V., Winnipeg, Man., Canada (Ontario Veterinary College, 1904); vouchers, F. Torrance and C. D. McGilvray. Richards, Thomas H., V.S., Winnipeg, Man., Canada (Ontario Veterinary College, 1901); vouchers, C. D. McGilvray and F. Torrance. Ross, James D., V.S., Winnipeg, Man., Canada (Ontario Veterinary College, 1894); vouchers, C. D. McGilvray and F. Torrance. Stiver, M. B., D.V.Sc., Elgin, Man., Canada (Ontario Veterinary College, 1895); vouchers, F. Torrance and W. Hilton. Welch, John, V.S., Roland, Man., Canada (Ontario Veterinary College, 1895); vouchers, F. Torrance and C. D. McGilvray.

NOVA SCOTIA—Jakeman, Harry W., V.M.D., Halifax, N. S., Canada (Veterinary Department, University of Pennsylvania, 1909); vouchers, Wm. Jakeman and C. J. Marshall. McLean, Adam Thomas, V.S., B.V.Sc., Truro, N. S., Canada (Ontario Veterinary College, University of Toronto, 1910); voucher, E. A. A. Grange.

ONTARIO—Barnes, Robert, V.S., Ottawa, Canada (Ontario Veterinary College, 1893); vouchers, J. G. Rutherford and A. E. Moore. Fowler, W. J. R., V.S., B.V.Sc., Toronto, Canada (Ontario Veterinary College, 1899); vouchers (omitted in report). Hilton, George, V.S., Ottawa, Canada (Ontario Veterinary College, 1897); vouchers, J. G. Rutherford and A. E. Moore. Rice, John M., V.S., Lindsay, Ont., Canada (Ontario Veterinary College, 1906); vouchers (omitted in report).

QUEBEC—Laroche, Omer, D.V.S., Montreal, P. Q., Canada (Ecole Veterinaire Francais Laval, 1905); vouchers, M. C. Baker and A. Etienne. Vigneau, Jos. H., D.V.S., Three Rivers,

P. Q., Canada (Laval University, 1897); vouchers, A. A. Etienne and M. C. Baker.

SASKATCHEWAN—Aikenhead, J. P., V.S., B.V.Sc., Humboldt, Sask. (Ontario Veterinary College, 1911); vouchers, D. Tamblyn and John F. Burnett. Armstrong, Jas. A., V.S., Regina, Sask., Canada (Ontario Veterinary College, 1888); vouchers, J. F. Burnett and D. Tamblyn. Dixon, Hugh L., B.V.Sc., Regina, Sask., Canada (Ontario Veterinary College, 1910); vouchers, J. F. Burnett and D. Tamblyn. DuFresne, J. B. A. A., D.V.S., Regina, Sask., Canada (Laval University, 1909); vouchers, J. F. Burnett and D. Tamblyn. Head, Charles, V.S., M.D.C., Regina, Sask., Canada (Ontario Veterinary College, 1906—Chicago Veterinary College, 1907); vouchers, J. F. Burnett and D. Tamblyn. Lockhart, Andrew A., V.S., M.D.V., Carnduff, Sask., Canada (Ontario Veterinary College, 1904—McKillip Veterinary College, 1905); vouchers, J. F. Burnett and D. Tamblyn. Murison, James J., V.S., Arcola, Sask., Canada (Ontario Veterinary College, 1901); vouchers, J. F. Burnett and D. Tamblyn.

HONOR ROLL.

The name of S. E. Weber, Lancaster, Pa., was added to the honor roll.

CABLEGRAMS.

“Paris, August 22, 1911.

“President, Veterinary Association,

“Convocation Hall, Toronto:

“Again present at roll-call to offer friendly greetings and best wishes.

“LIAUTARD.”

President Glover appointed two members to send an acknowledgment of receipt of cablegram to Prof. Liautard.

SECRETARY'S REPORT.

As Secretary Marshall's report will appear in detail in the published proceedings of the association, we will not use the much-needed space to reproduce it here; but desire to compliment Dr. Marshall on its completeness, and the clear and comprehensive form in which it was presented.

REPORT OF TREASURER.

RECEIPTS FOR 1910-11.

1910.

September 10—Balance in bank as per last annual report.....	\$2,332 47
December 5—Received from C. J. Marshall, Secretary.....	1,750 00

1911.

May 20—Received from C. J. Marshall, Secretary.....	775 00
July 25—Received from C. J. Marshall, Secretary.....	800 00
August 14—Received from C. J. Marshall, Secretary.....	2,000 00

Total receipts, 1910-11..... \$7,657 47

DISBURSEMENTS FOR 1910-11.

1910.

September 9—To L. A. Merillat, Chicago, Ill., expenses as Resident Secretary, 1909-10.....	\$15 85
September 9—To Chas. F. Roberts, New Haven, Conn., for traveling expenses to San Francisco meeting.....	100 00
September 9—To Orah M. Nichols, San Francisco, Cal., for typewriting report of Committee on Resolutions.....	1 50
September 9—To Chas. F. Roberts, New Haven, Conn., for services in case of Jos. Hubinger vs. American Veterinary Medical Association.....	25 00
September 9—To R. P. Lyman, Hartford, Conn., for salary to date	500 00
October 20—To Joseph Plaskett, Nashville, Tenn., for expenses as Resident Secretary to September 5, 1910.....	1 00
October 20—To Geo. R. White, Nashville, Tenn., for expenses as Treasurer, 1909-10.....	5 00
October 20—To Orah M. Nichols, San Francisco, Cal., for stenographic work, by C. J. Marshall.....	3 00
October 20—To Richard F. Bourne, Kansas City, Mo., for expenses as Resident Secretary for 1909-10.....	5 00
October 20—To J. P. Turner, Washington, D. C., for stamps and typewriting report of Committee on Legislation.....	4 75
October 20—To Richard F. Eagle, Fort Worth, Texas, for expenses as Resident Secretary, 1909-10.....	6 25
October 20—To R. P. Lyman, East Lansing, Mich., for expenses to and from 47th Annual Meeting and incidental expenses to date.....	240 86
October 20—To J. W. Klotz, Noblesville, Ind., for expenses as Resident Secretary, 1909-10.....	7 00
October 20—To S. F. Tolmie, Victoria, B. C., for expenses as Resident Secretary, 1909-10.....	3 85
October 20—To Standard Printing Co., Nashville, Tenn., for printing 600 copies Treasurer's report.....	15 00
October 20—To W. Dean Wright, Portland, Oregon, for expenses as Resident Secretary, 1909-10.....	2 20
October 20—To Bryant & Douglass, Book & Stationery Co., Kansas City, Mo., for supplies by R. P. Lyman.....	55
October 20—To Mrs. R. R. Carmack, Nashville, Tenn., for typewriting Treasurer's report.....	1 75
November 5—To Johnson & Prince, Philadelphia, Pa., for duplicating 200 letters.....	1 50

November 5—To W. L. Williams, Ithaca, N. Y., for expenses as Librarian from October 24, 1908, to September 6, 1910.....	16 39
November 5—To Joseph Hughes, Chicago, Ill., for membership fees and dues paid for Dr. Frederick Foster.....	8 00
November 5—To John W. Spence, Philadelphia, Pa., for printing letter heads, envelopes, bill heads, etc., by Secretary Marshall	20 50
November 21—To E. A. A. Grange, Toronto, Canada, for duty on membership forms.....	1 75
November 21—To American Surety Co., New York, N. Y., for premium on Treasurer's bond.....	10 00
November 21—To Edward P. Dolbey & Co., Philadelphia, Pa., for ledger, letter files, cards, index, trays, etc., by C. J. Marshall, Secretary.....	8 63
November 27—To H. L. Hungerford, Manila, P. I., for fees and dues returned.....	8 00
November 27—To William J. Guilfoil, Kansas City, Kan., for fees and dues returned.....	8 00
November 27—To E. P. Wood, Raleigh, N. C., for fees and dues returned	8 00
November 27—To M. C. Delano, Sacramento, Cal., for fees and dues returned.....	8 00
December 15—To C. J. Marshall, Philadelphia, Pa., for stationery, postal cards, stamps, expressage, etc.....	35 40
December 15—To J. Arthur Goodwin, New Iberia, La., for expenses as Resident Secretary to September 6, 1910.....	1 50
December 20—To R. P. Lyman, East Lansing, Mich., for stenographic services paid to C. M. Budd.....	25 03
December 20—To Marion L. Pattison, Oxnard, Cal., for fees and dues returned.....	8 00
December 27—To C. J. Marshall, Philadelphia, Pa., for expressage, postage, freight, etc.....	22 50
December 27—To Chas. F. Roberts, New Haven, Conn., for expenses to San Francisco and reporting 47th Annual Meeting	283 85

1911.

January 6—To Lewis E. Tuttle, San Francisco, Cal., for fees and dues returned.....	8 00
January 15—To Edward P. Dolbey & Co., Philadelphia, Pa., for seals and index cards by Secretary Marshall.....	3 10
January 15—To John R. Mohler, Washington, D. C., for stamps in mailing manuscript of Tuberculosis Commission.....	3 52
January 15—To William H. Hoskins Co., Philadelphia, Pa., for one Journal.....	85
January 15—To Johnson & Prince, Philadelphia, Pa., for duplicating letters.....	2 50
January 15—To John W. Spence, Philadelphia, Pa., for printing, letter heads, envelopes and postal cards.....	64 10
January 21—To John P. Turner, Washington, D. C., for use of Committee on Legislation.....	300 00
February 12—To Emele Pouppirt, Tulare, Cal., for fees and dues returned	8 00
February 12—To C. J. Marshall, Philadelphia, Pa., for expressage and stamps.....	31 05
February 12—To A. E. Donovan, Fort Riley, Kans., for fees and dues returned.....	8 00
February 12—To W. Horace Hoskins, Philadelphia, Pa., for floral wreath (Dr. C. T. Goentner).....	10 00

February 12—To Johnson & Prince, Philadelphia, Pa., for duplicating 1,300 letters by C. J. Marshall, Secretary.....	4 60
February 12—To Edward P. Dolbey & Co., Philadelphia, Pa., for letter files, twine and day book, by C. J. Marshall, Secretary	1 75
February 22—To Mrs. H. B. Cox, Philadelphia, Pa., for floral wreath (Dr. S. J. J. Harger).....	10 00
February 28—To D. McCuaig, McAdams Junction, N. B., for expressage and customs duty on stationery.....	1 65
March 23—To S. H. Gilliland, Marietta, Pa., for stamps, stationery, telegrams, etc.....	25 73
March 23—To T. L. Dardis, Stockton, Cal., for fees and dues returned	8 00
May 1—To Edward P. Dolbey & Co., Philadelphia, Pa., for mailing tubes, glue, rubber bands, etc.....	5 40
May 1—To Richard P. Lyman, East Lansing, Mich., for expressage, postage, typewriting, etc.....	9 19
May 8—To C. J. Marshall, Philadelphia, Pa., for expressage, stamps, etc.....	21 30
May 8—To Samuel D. Holt, Philadelphia, Pa., for engrossing certificates and resolutions.....	112 70
May 8—To J. B. Lippincott Co., Philadelphia, Pa., for application blanks, Constitution and By-Laws.....	52 25
May 8—To United States Express Co., East Lansing, Mich., for expressing 539 copies proceedings San Francisco meeting..	122 50
May 8—To Robert Smith Printing Company, Lansing, Mich., for printing 1,400 copies proceedings San Francisco meeting....	1,278 19
July 8—To American Express Co., Lansing, Mich., for expressing 502 copies proceedings 1910 meeting.....	115 46
July 16—To J. B. Lippincott Co., Philadelphia, Pa., for printing application blanks, by Secretary Marshall.....	11 50
August 6—To W. G. Clark, Marinette, Wis., for expenses as Resident Secretary.....	7 75
August 6—To I. E. Nesom, Fort Collins, Colo., for expenses as Resident Secretary.....	2 00
August 6—To John W. Spence, Philadelphia, Pa., for printing stationery, etc., by C. J. Marshall, Secretary.....	184 41
August 6—To Edward P. Dolbey, Philadelphia, Pa., for ½ doz. Dane letter files.....	1 80
August 6—To C. J. Marshall, Philadelphia, Pa., for telegrams, postage stamps, expressage, etc.....	63 15
August 6—To C. J. Marshall, Philadelphia, Pa., for salary for 1910-11	500 00
Total expenditures, 1910-11.....	\$4,392 06

DISBURSEMENTS BY THE INTERNATIONAL TUBERCULOSIS COMMISSION.
1910.

October 20—To M. H. Reynolds, St. Paul, Minn., for typewriting and extra copies Tuberculosis Commission report.....	\$11 80
1911.	
February 12—To M. H. Reynolds, St. Paul, Minn., for stamps and expressage for Tuberculosis Commission.....	15 91
February 28—To M. H. Reynolds, St. Paul, Minn., for letter heads (Tuberculosis Commission).....	7 25

March 2—To M. H. Reynolds, St. Paul, Minn., for 6 indexes for Tuberculosis Commission.....	1 80
March 10—To M. H. Reynolds, St. Paul, Minn., for express paid on 2,000 copies report International Tuberculosis Commission.....	8 55
May 1—To M. H. Reynolds, St. Paul, Minn., for stenographic work for Tuberculosis Commission.....	18 00
May 1—To M. H. Reynolds, St. Paul, Minn., for postage stamps for Tuberculosis Commission.....	10 00
May 20—To M. H. Reynolds, Secretary, St. Paul, Minn., for 30,000 copies report Tuberculosis Commission, printed and delivered	580 43
May 25—To M. H. Reynolds, St. Paul, Minn., for freight and storage charges on Tuberculosis Commission reports.....	13 22
July 8—To M. H. Reynolds, St. Paul, Minn., for multigraphing letters for Tuberculosis Commission.....	3 30
July 8—To M. H. Reynolds, St. Paul, Minn., for stamps.....	10 00
Total expenditures.....	\$680 26
Grand total disbursements.....	\$5,072 32
Balance in bank.....	2,585 15

Respectfully submitted,

GEORGE R. WHITE, Treasurer.

Toronto, Canada, August 22, 1911.

To the Finance Committee of the American Veterinary Medical Association:

GENTLEMEN—This certifies that George R. White, Treasurer, has on deposit with the State Trust Company, to the credit of the American Veterinary Medical Association, two thousand five hundred eighty-five and fifteen hundredths dollars (\$2,585.15).

J. C. ADAMSON, Cashier.

Nashville, Tenn., August 18, 1911.

REPORTS OF COMMITTEES.

REPORT OF COMMITTEE ON DISEASES.

According to the constitution and by-laws of this association it is the duty of the Committee on Diseases to report on the character and extent of prevalent contagious diseases throughout America and report on the same at each meeting of the association.

It appears to the chairman of this committee that many phases of our work should have reports calling attention to those things which have been brought to light and practice during the year.

It appears to me that in the place of the committee on diseases there should be four committees as follows:

A committee on infectious diseases which should report prevailing infectious diseases as to prevalence, etc., and should include any items of interest in bacteriology and pathology.

A committee on therapeutics and practice which should bring out newer ideas in therapeutics and practice.

A committee on surgery and clinics which should report on any new surgical phases.

A committee on veterinary sanitary measures which should report on laws and rulings controlling infectious diseases and on the subjects of meat and dairy inspection.

These committees could act as section committees on program.

In accordance to duties of this committee as defined in the by-laws, your chairman has made an effort to collect such information from the United States and Canada as would enable him to make a comprehensive report of existing contagious diseases.

ACTINOMYCOSIS.—This disease prevails especially in the Middle West. The economic importance of the disease has caused most owners to have their animals operated on and treated in the earlier stages, so that the large numbers in advanced stages that accumulated in the government rejected pens at the stockyards at the large packing centres a few years ago are gradually becoming less. It has been found at one of the large packing houses in one of our large cities that approximately 1 per cent. of the beef tongues will be found to contain small actinomycotic areas if each tongue be carefully palpated.

ANTHRAX.—Anthrax has continued to make its appearance in some of the Western and Southern States, especially Nevada, Texas, also in Delaware, and some of the Gulf States, also Northeast, especially Vermont as well as Canada.

A serious outbreak occurred in Eastern Texas (Beaumont District) during the past year. Prompt action by the state authorities in quarantine and vaccination soon brought the disease under control. Outbreaks have also been reported in South Dakota and Iowa, also reported from New York.

Dr. W. H. Dalrymple, under division 5 of the general program of this meeting, will make more extensive report of this disease in the South.

AVIAN DIPHTHERIA is prevalent throughout the country and causes hundreds of thousands of dollars loss annually to the poultry industry.

A special paper prepared by Drs. C. M. Haring and C. A. Kofoid, of California, will be read under division 4 of this meeting.

AMPHISTOMIASIS has been found in some cattle raised near Omaha, Nebraska. The amphistoma conicum were found in the rumen. Very few reports have ever been made of this parasite from the United States.

BURSATTI has again made its appearance throughout the greater part of the country.

CANINE DISTEMPER continues to be prevalent among young dogs in the entire country.

An article appeared in a recent issue of the *Journal of Infectious Diseases* which shows the painstaking experiments conducted by Dr. N. S. Ferry, in which he has probably proved beyond doubt the causative germ of this malady.

This organism is a short, slender bacillus which he proposes to call *Bacillus bronchicanis*. It has been isolated from the nasal discharge, larynx, trachea, lungs, blood and other organs. It is gram negative, motile, and grows slowly. It does not produce indol. It does not coagulate milk and no acid is formed. It does not produce gas and is aerobic. Inoculations of this organism subcutaneously or intravenously does not produce typical symptoms, but inoculated intratracheally or poured in nostrils typical symptoms develop. It was found that staphylococcus and streptococcus are often secondary invaders, and staphylococci are frequently found in the blood, indicating the possibility of a terminal staphylococcic septicæmia. The typical symptoms of canine distemper noted are cough, diarrhoea, vomiting, purulent discharge from the eyes and nose, skin eruptions, nervous manifestations as convulsive muscular twitching or choreaform movements. The *Bacillus bronchicanis* will be agglutinated by serum from a dog with distemper in dilutions 1 to 800. The mucopurulent discharge Ferry considers as due to the secondary invaders, and claims to have found the causative organism in the lung and trachea three weeks after the animal has made an apparent recovery. If the dog be given an anti-

septic bath and placed in clean, disinfected quarters the secondary invading organisms which produce the prominent symptoms are less active and recovery takes place earlier.

J. P. McGowan of England has recently confirmed Ferry's results.

CEREBRO-SPINAL MENINGITIS among horses has been reported in various parts of the country, especially in some of the Atlantic States. In some of these reports under the above heading the cause was attributed to moldy corn, in others to moldy silage. One outbreak occurred in Colorado. The cause was not determined. Another outbreak was reported from Iowa.

CHICKEN CHOLERA is widely distributed and causes much financial loss.

COCCIDIOSIS is found in cattle, rabbits and in birds. The greatest loss is, perhaps, in young chicks. The coccidium *tenellum* causes one form of white diarrhoea and has been reported from the Eastern as well as the Western States.

COLIC, gastric and intestinal, while not contagious, yet on account of its importance the committee wishes to call attention to it. This disease alone perhaps causes more loss annually the country over than any one of the contagious diseases. Among the principal causes are those of over-feeding on corn chop, barley, etc. Alfalfa impaction, which most often occurs in the floating colon, gives considerable trouble in sections of the country where alfalfa constitutes the roughage.

CONJUNCTIVITIS CONTAGIOSUS OF CATTLE AND SHEEP—An occasional herd of cattle is reported with this malady. Two bands of sheep similarly affected are reported from the Rocky Mountain region during the past year.

CONTAGIOUS ABORTION in cows is assuming dangerous proportions. It is found widely distributed throughout the United States. Dr. Van Es reports similar conditions in mares in North Dakota. Dr. M. H. Reynolds, St. Paul, Minn., has issued a popular bulletin on the subject. A special paper on this subject will be presented by Dr. E. S. Good, of Kentucky, under division 4 of this meeting.

DERMATOMYCOSIS has been reported among sheep in Wyoming. The trichophyton *tonsurans* has been demonstrated. About ten bands have been found affected. Prompt action by the sanitary board and Government will result in its quick eradication.

DEMODECIC SCABIES appears quite widely distributed among both hogs and dogs. It appears sporadically.

DOURINE has again made its appearance in the United States. It was first observed in a stallion in Southwestern Iowa. A special report will be made by Dr. John R. Mohler under section 1 of the special reports of this committee. Dourine still exists in Canada. This disease is well in hand and is confined to a small section of Alberta.

ENTERO-HEPATITIS has been reported in turkeys from practically every state in the Union. In some sections its loss is serious, causing much financial loss.

EPITHELIOMA CONTAGIOSUM in birds has been reported from the Atlantic, Middle Western and Pacific States. A special paper touching on this subject prepared by Drs. Haring and Kofoed will be presented under division 4 of this meeting.

GLANDERS still appears in the greater part of the United States and a portion of Canada. The identification by clinical signs and other measures and the destruction of diseased animals and disinfection of premises is slowly but surely eradicating the disease from the continent. In most states a small indemnity is paid for the horse that is thus destroyed. Dr. John R. Mohler has recently issued a bulletin on the subject of the "Diagnosis of Glanders by the Fixation of the Complement." In some laboratories the precipitation test as advocated by Konew is used. The laboratory of pathology of the Kansas City Veterinary College, which does the testing for Western Missouri, uses this method. Glanders is practically eradicated from Eastern Canada and an extensive campaign is under way to eradicate it from Western Canada.

GID in sheep is still a serious menace to the sheep industry of Montana.

GRUB in the hides of cattle are very common in the southern part of the United States, but grows gradually less till we reach the Canadian border. In some of the extreme Northern States no grubs are found. Thousands of dollars loss occurs every year in hides of cattle slaughtered during the grubby season.

Grub in the heads of sheep are quite common in the sheep-raising portions of the United States (Rocky Mountain region).

HÆMORRHAGIC SEPTICÆMIA has been reported from Georgia. This disease was also reported from one of the Northern States as occurring in sheep.

HOG CHOLERA is found wherever hogs are raised in the United States. It has been very common in the Middle West

during the past winter and spring. While many of the state experiment stations are producing hog cholera serum, and many private firms as well as some of the biological houses, yet there has not been sufficient serum available to supply all who have asked for it. This disease exists only sporadically in Canada.

INFECTIOUS ANÆMIA is found throughout the United States and is serious in many localities. It is of considerable importance from an economic standpoint in Canada. Much investigation work has been done along this line. Dr. Van Es, of North Dakota, has proven the infectiousness of the urine in these cases. Drs. Francis and Marstetter, of College Station, Texas, have also devoted much time to experimental work along this line. The United States Bureau of Animal Industry has issued a bulletin on this subject as well as the experiment stations of Texas and Nevada.

It has been suggested that the following treatment may prove valuable in the treatment of infectious anæmia: Hypodermic injections (subcutaneously) of 30 to 40 grains sodium cacodylate. This dose repeated every three or four days. This preparation contains arsenic that is not so toxic as white arsenic. It is slowly absorbed and slowly eliminated.

JOHNE'S DISEASE of cattle exists in Oregon, Wisconsin and Tennessee.

LIP AND LEG ULCERATION was first reported to assume a virulent form in sheep in Montana. In August, 1909, it had assumed such a virulent form in Wyoming that a Federal quarantine was placed on several counties in the north central part. Dr. W. E. Howe, Denver, Col., is in charge of the Federal quarantine in the Rocky Mountain district lying east of Utah. Most of the territory has been released, made possible through dipping, hand dressing with hot creolin solutions and prevention of spread through movement of the infected flocks. Additional territory will probably be released in the fall.

MALIGNANT ŒDEMA has been reported in isolated cases both in horses and cattle.

NECROBACILLOSIS other than the form noted under lip and leg ulceration occurs in hogs and calves, especially in the Rocky Mountain districts. The loss among these animals has not been so severe as in other years. For the first time it has made its appearance among hogs and calves in the eastern part of the continent, especially Vermont.

Sheep and particularly lambs develop sore lips when first taken from the range and placed on dry feed in the feed lot and

where the feed consists partly of roughage as alfalfa. These lips usually heal without treatment. In 90 per cent. of the cases investigated through the assistance of the pathological laboratory of the Colorado Agricultural College have been found to become infected by the *Bacillus necrophorus*. As a rule the sheep and lambs readily gain an immunity and recover in from three to four weeks. *Staphylococcus pyogenes aureus* and *albus* and *streptococcus pyogenes* are also found. In those bands in which *B. necrophorus* is not found, recovery is much earlier (ten to fourteen days).

Bulletins on necrobacillosis have been published by the United States Bureau of Animal Industry and some of the state experiment stations.

NODULAR DISEASE of sheep occurs in native, but not in the range sheep. This disease still continues to be a serious problem of the sheep business of the South.

OVINE CASEOUS LYMPH-ADENITIS is still found among range sheep. The losses from this disease is about the same as in other years.

POISONOUS PLANTS continue to cause hundreds of thousands of dollars loss annually. In the plains of the Middle West the *Astragalus mollissimus* and *Aragalus Lamberti* (loco), and in the Rocky Mountain region *Delphinium* (larkspur, several varieties). Among some of the other poisonous plants are the *Cicuta* (water hemlock), *Zygadenus* (death camass), *Lupinus*, *Aconitum* and woody aster. Dr. H. S. Eakins, of the Wyoming Experiment Station, has been doing some very valuable work in the investigation of woody aster poisoning in sheep in that state.

It would be worth the while for every veterinarian to secure from the State Board of Agriculture of Missouri the bulletin recently issued which was prepared by L. H. Pammel. Some of the interesting things found in this bulletin may be enumerated here:

"Many poisonous plants are found in the Missouri Valley which, when ingested in large quantities, cause enteritis, spasms and paralysis. General species of *Equiseta* (horse tail) are found. This plant may be incorporated in the hay and in large quantities cause paralysis of the hindquarters, spasms and death. Warning is also given about the much-discussed Johnson grass and sorghum. The latter, especially when young, frosted or following drought, etc. The offending substance is hydrocyanic acid contained in a glucocyde known as dhurrin. Corn cockle,

and particularly the seed, contains an active principle called saponin, which is poisonous. This substance is not only poisonous for animals but also for fowls. Among the symptoms noted are vertigo, nausea, tenesmus, diarrhœa and impaired locomotion. The crow's foot and rattle-box are also found and known to be poisonous. Horses gnawing at the bark of locust trees have been known to become poisoned; the symptoms are those of stupor, defective vision, inco-ordination of movement, etc. There have been many reports of poisoning on the young sprouts and young roots of cockle burr. The condition produced is one of intense gastro-enteritis.

PARALYSIS of the hindquarters in horses, sheep, pigs and rabbits have been reported from many quarters.

PNEUMONIA verminous, still exists in some bands of sheep in the Southeast and some of the North Central States, as well as cattle along the Gulf.

POLL EVIL AND FISTULA of the poll and withers continues to be common all over the country. The use of bacterial vaccines made from the common pus germs, together with intelligent surgery and after-treatment, makes this disease easy to handle, and the "vet" no longer takes down the back alley when he sees a case coming.

RABIES continues to spread and is now found in nearly every part of the United States. In some localities it is suppressed by effective muzzling ordinances, with destruction of all dogs found on the highways not muzzled. The disease has not been so prevalent in most of the states in the western third of the United States as the year previous, while in the Central States the condition has been more serious.

There is a laboratory in Kansas City in which antirabic vaccine is prepared and sent out, not only for the purpose of vaccinating against rabies in persons, but also in animals. The price for the course of treatment in persons is \$50, and in animals \$25. A dose is sent each day. This laboratory is in charge of Dr. V. Nisbet. There may be other laboratories doing the same. A few cases of rabies have existed in Southwestern Ontario during the past six months, but the disease may be considered under control. No cases have appeared in other sections of Canada.

SCABIES still exists among horses, cattle and sheep in certain districts in the West and Northwest of the United States, but satisfactory progress is being made in its eradication. Scabies

in horses and cattle is reported by Dr. Higgins as being well in hand in Canada.

STRANGLES in horses has been prevalent in most parts of the country during the past spring and early summer. Many are successfully using the bacterial vaccine made from the streptococcus equi, both as a preventive vaccination and as curative.

SYMPTOMATIC ANTHRAX exists more commonly in the western part of the continent, although this disease is reported to exist in Vermont and the Northeast, as well as Canada. Vaccination has successfully combated this disease.

SUGAR BEET POISONING occurs in those parts in which sugar beets are raised, which are principally California, Utah, Idaho and Colorado. Horses, cattle, sheep and hogs are pastured on the fields after the beets are removed. The tops have some of the beet attached (left in the process of topping). The ingestion of large quantities of the top and beet results in a gastroenteritis, and in horses, colic. The changes noted in the organs in a microscopic examination are those of cloudy swelling and focal necrosis, especially noticeable in the kidneys and liver, also passive congestion of same.

STRONGYLOSIS—Many forms of strongyles are found in our domestic animals. More than 90 per cent. of the horses of the Middle West harbor the *Strongylus armatus*. A very able bulletin has recently been written by Dr. B. H. Ransom, of the Zoological Division of the United States Bureau of Animal Industry on "Nematodes of the Intestinal Tract of Ruminants," also one by Mr. M. C. Hall, of the same division, on the subject of "Feces Examination for the Detection of Animal Parasites."

TEXAS FEVER—A closer study of the biology of the fever tick has been made during the past few years, and an excellent bulletin on this subject has been prepared by Dr. Graybil, of the United States Bureau of Animal Industry, giving the results of his investigations, and is published by that bureau.

Satisfactory progress has been made in the eradication of the tick, and much territory is being placed above the quarantine line each year.

Many experiment stations have continued to immunize northern calves by inoculating them with blood from "ticky" cattle preparatory to the shipment of the calves below the quarantine line.

Experiments have also been continued with the view of finding a remedy which would curtail the enormous loss from this disease.

Dr. Mark Francis, of the Texas Experiment Station, in a personal letter to the writer, is of the opinion that he has the question solved and with the doctor's consent will here quote this letter in part:

"I believe that we have found a practical remedy for Texas fever. I have been struggling with this problem for over twenty years and this is the first time I have gotten results that were really promising. We simply inject into the abdomen a 1 per cent. solution of the bimuriate of quinine with urea, giving about one cubic centimeter of the solution for each pound of live weight. You will be astonished to learn that animals with high fever—say 107° or more and passing bloody urine—were absolutely normal in less than forty-eight hours. One case died. We found, on post-mortem examination, that the needle did not enter the abdomen proper, but had delivered the solution into the sub-lumbar tissues; so that when one is making the injection, if he finds that the solution is running in slowly, you may be almost certain that your needle is not in the abdominal cavity. We make up this solution in a 1,000 cubic centimeter flask, similar to a wash flask, found in every laboratory. We attach a piece of tubing, say two or three feet long, and a sterile needle on the end of this. We operate on the animal standing. First we scrub the right flank pretty well with soap and water, and shave all the hair in the triangle between the hip bone and the last rib on the right side. Wash the water and soap off with sterile water, dry the skin with sterile cotton, apply alcohol somewhat freely, then swab the area with tincture of iodine. We insert the needle rather low down, just in front of the anterior border of the internal oblique muscle of the abdomen. We made some mistakes in going in too high. We repeat this injection in forty-eight hours, if it is thought best to do so. There will, of course, occur cases that are too far gone before we apply this treatment, that die in spite of anything that flesh and blood can do, but I wish to make the statement now that I believe that I can save 98 per cent. of the cases of Texas fever if we can see them every day."

The doctor further asks all who are in a position to give this further trial to do so, and report same.

TUBERCULOSIS is exacting its usual toll both in human lives and in the lives of the lower animals.

The United States Bureau of Animal Industry in its last annual report gives tabulation of 400,008 cattle tested through-

out the United States by state and government officials, giving as a result 37,000, or 9.35 per cent., as reactors. Of the reactors, 24,784 were slaughtered, of which 98.39 per cent. were found tuberculous.

Dr. D. F. Luckey, State Veterinarian of Missouri, is giving the intradermal test in cattle a practical test in his state work. The following is an abstract from a recent letter which I give with his permission:

"We begun the use of the intradermal test January last. We attempted to verify the results with subcutaneous test and further by post-mortem examinations. We had occasion to give this test a severe trial around Columbia, and I am glad to report that it appears to be a decided success, especially during the summer months. I believe the intradermal test will prove more reliable than the subcutaneous tests. We have not hesitated to condemn cattle upon this test alone. Its accuracy depends largely upon the care in making the injection. We found that unless extreme care was used, the injection would not be properly made. In any animal with a bad history we injected both caudal folds. Age, pregnancy, recent parturition, excitement and weather conditions seemed to cut no figure with the accuracy of the test. Using it, the veterinarian can do his work in daylight. He does not have to wade about in filthy barns during the night. In making the tests around Columbia our men would ride all day, stop at different places, making the injections and tagging the cattle. Anywhere from forty-eight hours to four or five days thereafter (usually on the second day), a re-examination of the same cattle is made with the view to recording the results of the injections. A little swelling sometimes follows from the insertion of the needle, but usually disappears by the end of forty-eight hours. The swelling as a result of tuberculin reaction is usually well marked by that time and persists for about a week. As far as our observations have gone, there is a little uneasiness and switching of the tail noticed in tuberculous animals, beginning a few hours after the injection. There is exfoliation of the epithelium as the reaction disappears."

More states are requiring the tuberculin testing of cattle imported into the states for breeding and dairy purposes. The tuberculous animal is more surely getting under control.

Bellini gives a contribution to the study of the ophthalmic reaction to tuberculin as follows: "Of 200 bovines which were

given the ophthalmic test at Mentone, Italy, 29 gave positive reactions. All the animals were given a careful post-mortem examination, when the reactors were found to be affected as well as three of the animals which had not been detected during the test. The author is of the opinion, however, that the reaction would have been detected in these three animals if they had been constantly observed for a longer period. The reactions appeared once after five hours, twice after twelve hours, once after fourteen hours, four times after sixteen hours and once after thirty-seven hours. The reactions were of short duration in thirteen animals, having disappeared in one-half hour in one case, after one hour in two cases, after two hours in six cases, after three hours in one case and after four hours in three cases. In five cases the disappearance of the reaction was much slower."

I wish to call the members' attention to the recent report on tuberculosis by the Argentine Republic, which gives much data along this line.

Volumes have been written discussing for and against a possibility of a cow eliminating the Bact. tuberculosis through the milk when the udder is not affected. I wish to call your attention to the following extract taken from an article by E. G. Peterson:

"A cow in excellent physical condition was given intravenously 18 c.c. of a bouillon culture *Ps. pyocyaneus*; later 20 c.c. She remained perfectly normal. All examinations of the milk for *Ps. pyocyaneus* were negative. Another cow not in excellent condition, but somewhat emaciated, was given 20 c.c. bouillon culture of *B. coli communis*. All examinations of milk for *B. coli communis* were negative. Likewise the testing of milk after intravenous injections of Bact. tuberculosis all gave negative results."

Tuberculosis has been increasing in hogs at a tremendous rate. It is believed that with the elimination of the tuberculous cow from the herds that the extermination of tuberculosis in hogs can eventually be accomplished through slaughter and disinfection and starting new herds.

Stockmen do not realize the economic importance of tuberculosis among their herds of hogs any more than they do among their cattle.

In the year book of the United States Department of Agriculture for the year 1910, which has just been distributed, we

find the following interesting data. Inspections of meats by the United States Government is carried on in 919 establishments distributed in 237 cities. Of 49,179,057 animals inspected at the time of slaughter, 7,962,189 were cattle, 2,295,099 were calves, 27,657,021 were hogs, 11,149,937 were sheep, and 115,811 were goats. Of these, 113,742 carcasses on account of disease and 874,211 parts, making a total condemnation of nearly 1,000,000.

Tuberculosis was the cause of over 46 per cent. of the condemnations among cattle and over 96 per cent. of those among hogs.

WHITE DIARRHOEA IN CHICKS has been studied the past few years by many experiment stations in the United States. It has been established that there are two forms of white diarrhoea in young chicks. First, a coccidian form due to the coccidium tenellum and a bacillary form due to the Bact. pullorum. This latter organism is rod-shaped with rounded ends measuring from three to four microns in length. It is gram negative and stains readily with ordinary aniline dyes. It is readily isolated from the heart blood, liver, kidneys and unabsorbed yolk. Three sources of contamination are recognized: First, the diseased ovary of the hen; second, contaminated incubators or nursery trays, and third, contaminated quarters. Jones has found that 1:1,000 solution of bichloride of mercury will kill them in thirty seconds; 1 per cent. carbolic acid kills in 5 minutes; 1 per cent. creolin kills in five minutes; 3-1/3 per cent. lactic acid kills in five minutes, and 5 per cent. carbolic acid kills in thirty seconds.

The writer has been conducting experiments at the Colorado Agricultural College during the past three years. In investigations to determine an effective remedy the following combination has been found most effective:

Zinc sulphocarbolate	15 grs.
Sodium sulphocarbolate	7.5 "
Calcium sulphocarbolate	7.5 "
Mercury bichloride	6 "
Citric acid	3 "

For practical purposes we had this quantity made up into tablet form.* Then each tablet dissolved in one gallon of water made the required dilution. This was kept before the chicks from the time they are hatched to from five to six weeks, and

* By the Abbott Alkaloidal Co. of Chicago, Ill., U. S. A.

then every day or two for a few weeks longer. It was found to save 70 per cent. to 80 per cent., whereas the usual number of 15 per cent. to 20 per cent. were saved with other remedies. This combination is found to be useful in other forms of diarrhoea in all the barnyard fowls.

There are many other problems that should be taken up in this report in the absence of other committees to take care of newer things, but space will not permit.

B. F. KAUPP, Chairman;
C. H. HIGGINS,
J. R. MOHLER,
A. T. KINSLEY,
W. H. DALRYMPLE.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

RESOLVED, That the president shall each year appoint a committee of three members of the association who shall, personally or otherwise, as they may deem necessary, investigate the work of the various veterinary colleges of North America, and who shall report regarding each such college at the annual meeting of the association. Any school or college refusing this committee reasonable opportunity for such investigation shall be recommended for exclusion from the list of accredited colleges whose graduates are eligible for membership in this association. That a sum not to exceed five hundred dollars be appropriated from the funds of the association to defray the expenses of this committee.

Resolved, That in the event of any member of this association becoming aware of the falsification by any other member of any mallein or tuberculin test, it shall be his duty to report the facts in writing to the secretary for presentation to the Executive Committee.

We recommend that the annual meeting of this association be extended to five days, and that at least one session shall be devoted to the subject of veterinary education, and said session shall be under the direction of the Committee on Intelligence and Education, and all recommendations emanating from the Association of Faculties and Examining Boards shall be considered at this session.

We recommend that the official report of the Association of Faculties and Examining Boards in the future be published as an appendix to the proceedings of this association.

In view of the fact that the profession is becoming constantly more impressed with the importance of skill and care in the application of the tuberculin and mallein tests, it is suggested that all members shall deprecate, and so far as possible, discourage the practice of employing persons other than qualified veterinarians in the performance of this delicate scientific work.

The Dominion of Canada has for the past ten years occupied and filled a conspicuous place in the field of veterinary sanitary police control work. Sister countries and foreign nations have vied with one another to follow in the pathway of her progress and achievements. Scientific advancement has recorded and chronicled the splendid work done. Canada's leadership and masterly solution of many great problems that encompassed the development of her live stock interests. Her system of control and plans of eradication of contagious and infectious diseases of animals have added a wealth of knowledge in the solution of these questions, many times under the greatest natural obstacles that ever confronted this work. As Veterinary Director General, Dr. J. G. Rutherford has placed his own country and sister nations under a great debt for his splendid work and triumphs in this sphere of service. This association takes this opportunity of bearing testimony of its appreciation of his many valuable contributions to its records, and is justly proud of the great public service he has rendered his own people.

Resolved, That the American Veterinary Medical Association extend its thanks to Major-General Wm. H. Carter, United States Army, for his active, patriotic assistance to our committee during the last session of Congress in the direction of increasing the efficiency of the United States Army veterinary service.

Communication from the Committee for the Erection of a Monument to the Memory of Professor S. Arloing, Correspondent of the Institute, Director of the National Veterinary School at Lyons, Professor in the Faculty of Medicine.

LYONS, May 25, 1911.

M. Chauveau, member of the institute, Inspector General, the members of the faculty of the National Veterinary School at Lyons, being of one mind with their colleagues of Toulouse and of Alfort, with the rector of the Academy at Lyons, with the deans, the professors of the faculties of the University of Lyons and their compatriots, and all wishing to honor the memory of Professor S. Arloing, have resolved to raise at Lyons, and at Cusset, his native town, a monument to the savant, the master,

the colleague and the friend. The representatives of the public authorities and of the various academies, societies and associations to which Professor Arloing belonged, have promised to grant their patronage to a public subscription opened for perpetuating the memory of this useful man.

A large committee has been organized, therefore, through which a warm appeal is made to all those who, knowing the work of Professor Arloing, wish to associate themselves with an act of admiration and of justice.

Arloing, as a savant, and as a professor has rendered unforgettable services to veterinary and medical science and instruction. By his researches he contributed in a great measure to the progress of general and comparative medicine.

Being a man of duty, Arloing, by his active propaganda, made known by all means the applications of modern hygienic discoveries, as applied both to man and to animals, and especially with regard to tuberculosis.

In all the above respects Arloing deserves the gratitude of all men.

The Committee.

We recommend that the association contribute the sum of \$100 to the committee for the erection of a monument to the late Professor S. Arloing.

Resolved, That this association publish an edition of twenty-five hundred copies of the primer on bovine tuberculosis, which has been prepared by the International Commission for the Control of Tuberculosis, and that it also be printed in the proceedings. Though the work for which the commission was created is now practically completed, it be continued during the coming year, that it may be in a position to defend its recommendations or deal with any new phases of the question that may arise.

We join in an expression of the deepest appreciation in the kindly hospitality of the Dominion of Canada, the Province of Ontario, the City of Toronto, and the local committee of arrangements. We desire to convey to the chairman, Dr. E. A. A. Grange, our hearty assurances that we now fully realize and appreciate the mental viewpoint which prompted him at the San Francisco banquet to so graphically and yet modestly dilate on the various natural advantages of this favored city, which had so much to do with our acceptance of his kind invitation.

We sincerely thank the retiring officers of the association for their earnest and painstaking efforts on behalf of the association during the period its interests have been committed to their care.

A. M. FARRINGTON, Chairman;
W. H. HOSKINS,
J. G. RUTHERFORD,
J. W. CONNAWAY,
W. L. WILLIAMS.

REPORT OF THE COMMITTEE ON NECROLOGY.

Your committee regrets to report that during the past year twelve members have been called to their reward.

PROF. S. ARLOING, dean of the Veterinary School of Lyons, France. Dr. Aloing was one of the honorary members of our society, and one of the most noted members of the veterinary profession. He died March 21, 1911, at the age of 65 years. He was a recognized scientist of the highest class. As a favorite student of Chauveau, the Veterinary Director General of the Veterinary Schools of France, he succeeded him in the chair of anatomy and physiology in 1886. Five years later he was selected as dean of this school. He has held both positions continuously since that time. As a micro-biologist he gained his greatest fame. He discovered the germ that caused "blackleg" and named it the "Bacillus Chauveau," in honor of his beloved teacher, Chauveau. His valuable and extensive work on tuberculosis is classical. He was justly elected an honorary member of the American Veterinary Medical Association in 1898. Many of us had the pleasure of meeting him in Washington, as a member of the International Tuberculosis Congress, in 1908, and were impressed and delighted with his modest, genteel, scholarly and scientific personality. Let us join in sympathy with his host of colleagues and friends in Europe.

HERR PROF. DR. A. JOHNE, Pirna, Germany—During the past year our association has lost another highly esteemed honorary member. Prof. Dr. A. Johne was born December 10, 1839, near Dresden. He received his education at various medical and veterinary schools. He became professor of pathology at the Royal Veterinary College and created a department of veterinary pathology of international reputation. His work with and study

of the anthrax bacillus in the early days of bacteriology is still considered to be classic. He collaborated with Hirschfeld in the publication of a general pathology, in which he wrote the veterinary part. This book was one of the best written scriptures on animal pathology and every student should read this precise and clear publication. Besides publishing many scientific articles on tumors, etc., he was editor-in-chief of one of the leading veterinary periodicals of Germany. He retired from active work as professor in 1905, and lived in a beautiful country home, where up to his last hour his many pupils and friends were received with the kindness for which Prof. Johne was noted. He died on the 15th of December, 1910.

DR. CHARLES F. GOENTNER, Malvern, Pa.—A loyal man to his profession, a good citizen of the community of his adoption, faithful and active for a score of years in veterinary association circles.

DR. WILLIAM A. DRYDEN, Columbus, Ind.—Born at Roxburyshire, Scotland, December 25, 1855. A few years later moved with his parents to Tavistock, Ontario. He attended the Ontario Veterinary College at Toronto, graduating from there March 31, 1882. He departed this life on March 10, 1911.

DR. A. A. HARMON, Flagstaff, Ariz.—A graduate of the veterinary department of the University of Pennsylvania in 1902, and also a graduate of the Massachusetts Agricultural College. He died on November 8, 1910, at Phoenix, Ariz., of hemorrhage of the lungs. Dr. Harmon's colleagues speak very highly of his many manly virtues as a student, teacher and co-worker, and we join with them in their high esteem and greatly mourn his untimely death.

HARVEY E. TALBOT, Des Moines, Iowa.—A graduate of Chicago Veterinary College in 1895. He was Assistant State Veterinarian of Iowa for about fifteen years, and Secretary of the State Examining Board for about ten years. He died July 18, 1911, as the result of glanders, contracted while doing his official duties, from which disease he had suffered for about four months.

FREDERIC A. ILLSTRUP, M.D.V., Willmar, Minn.—Died suddenly while engaged in his professional duties on June 5, 1911, in his forty-third year. He was stricken with heart failure and died before medical aid could reach him. Dr. Illstrup was born at Buffalo, Wright County, Minn., in 1868, and graduated from the Chicago Veterinary College in the early '90s.

J. OTIS JACOBS, Reno, Nev.—A graduate of the University of California, died July 5, 1911. For a number of years he was in the federal service. He resigned about five years ago and entered practice in Reno. To his efficient work as secretary of the Nevada State Sheep Commission much of the success of their work in scabies eradication was due. Dr. Jacobs was a skillful veterinarian, a clean, straightforward man, a good citizen, a loyal friend.

REUBEN R. HAMMOND, Cherokee, Iowa.—A graduate of Ontario Veterinary College in 1885. He formerly lived and practiced in Le Mars, Iowa, but later removed to Cherokee, Iowa, where he died on the 12th of April, 1911, after a lingering sickness covering a period of one year.

ROSSLYN J. STAFFORD, Washington, D. C.—A graduate of Cornell, 1906. Before entering Cornell he had been a student at Colgate University. After leaving Cornell he entered the service of the Bureau of Animal Industry as an inspector, but was later transferred to the laboratory of the pathological division. He was a highly respected man, with lofty ideals and a bright future, and his short period of work as a veterinarian should be an example to us all. He died on June 20, 1911.

HARRY D. FREEMAN, Roswell, N. M.—A graduate of the Kansas City Veterinary College in 1908. He was in the employ of the Bureau of Animal Industry for twelve years before entering the veterinary college. On graduating he immediately entered the bureau as an inspector. He was a self-made man, of estimable character and a faithful employee of our government. He died of tuberculosis, after a lingering sickness, on April 11, 1911.

THOS. G. SHERWOOD, New York City.—A member of the Royal College of Veterinary Surgeons, graduating from the Veterinary College of Glasgow, in 1882. Dr. Sherwood was killed on July 24, 1911, by the overturning of his automobile.

WHEREAS, It has seemed best to Almighty God, in His infinite wisdom, to transfer to other fields of work and usefulness our friends, co-workers and fellow members, Doctors S. Arloing, A. Johne, Charles F. Goentner, William A. Dryden, A. A. Harmon, Harry E. Talbot, Frederick A. Illstrup, J. Otis Jacobs, Reuben R. Hammond, R. J. Stafford, Harry D. Freeman and Thos. G. Sherwood; and,

Whereas, It seems fitting that this association should record its feelings of grief at their loss; therefore, be it

Resolved, That in the deaths of these associates this association feels the loss of personal friends and co-workers, and the profession has also suffered a loss; and be it further

Resolved, That we extend to the family of each the assurance of our sincere and heartfelt sympathy in our common bereavement, and that a copy of these resolutions be spread upon our records.

CHAS. E. COTTON, Chairman;
J. A. STEVENSON,
G. H. ROBERTS,
J. F. WINCHESTER,
GEO. B. MCKILLIP.

EXECUTIVE COMMITTEE REPORTS.

As a result of five meetings of this committee the following reports are made:

First Meeting, August 21, 2 p. m.—On motion, duly seconded and passed, it was voted to recommend to the association that graduates of the Grand Rapids Veterinary College of 1911 and subsequent thereto be recognized as eligible to membership, and that graduates of 1906 to 1910, inclusive, be recognized as eligible five years from the date of this recommendation.

Second Meeting August 21, 8 p. m.—On motion, duly seconded and passed, it was voted to recommend to the association that Dr. S. E. Webber be placed on the Honor Roll of membership of the association.

Voted—That we recommend to the association that the Treasurer be and hereby is directed to pay to Dr. C. J. Marshall the sum of one hundred dollars in full for his expenses as chairman of the Committee on Publication in 1910.

Voted—That we recommend to the association that the issuance of certificates of membership be abolished, and in lieu thereof that the Secretary be authorized to issue membership cards suitably inscribed, of pocket size, and to furnish with such cards a suitable case in which the same may be carried.

Voted—That we recommend to the association that the chairman of the Publication Committee receive the sum of two hundred and fifty dollars per annum for his services in preparing the report of the annual proceedings for printing.

Third Meeting, August 23, 8.30 p. m.—Voted—That we recommend to the association that the bill for \$47.50 presented

to Dr. J. P. Turner for the printing of a brief on the history of army legislation be paid.

Voted—That we recommend to the association that Dr. F. Hobday, F.R.C.V.S., of London, England, be elected to honorary membership of this association.

Fourth Meeting, August 23, 12.30 p. m.—Voted—That we recommend to the association that the following * applicants be elected to membership in the association:

Voted—That we recommend to the association that the price of the published proceedings of the association to non-members be changed from 60 cents per 100 pages to \$3 per copy.

Voted—That we recommend to the association that the resignation of Dr. A. W. Bitting, Lafayette, Indiana, be accepted.

Fifth Meeting August 24, 5 p. m.—On motion, duly passed, it was voted to recommend to the association that the by-laws be so changed that the surety bond required of the Treasurer shall be two thousand dollars, and a bond required of the Secretary in the sum of one thousand dollars.

Voted—That we recommend to the association that the Secretary be directed to establish a card index system as an aid in keeping his accounts and records.

Voted—That we recommend to the association that the Secretary be directed to place the names of all members whose active membership has continued for twenty-five years, and who are otherwise properly qualified, on the Honor Roll of the association.

A. D. MELVIN, Chairman;
R. A. ARCHIBALD,
JOSEPH HUGHES,
E. A. A. GRANGE,
C. A. CARY,
And Officers of Association, *ex-officio*.

ELECTION OF OFFICERS.

Election of officers resulted as follows:

President—Dr. S. Brenton, Detroit, Mich.

Vice-Presidents—Dr. V. A. Moore, Ithaca, N. Y.; Dr. L. Van Es, Fargo, N. D.; Dr. H. Jensen, Kansas City, Mo.; Dr.

* List published on p. 97.

J. P. Turner, Washington, D. C.; Dr. G. H. Roberts, Indianapolis, Ind.

Secretary—Dr. C. J. Marshall, Philadelphia, Pa.

Treasurer—Dr. George R. White, Nashville, Tenn.

PAPERS AND DISCUSSIONS.

A complete list of the papers to be presented, and their authors, was published in the July issue of the REVIEW, and we believe no especial benefit can be afforded our readers by repeating them here. Suffice it to say, that most of them were presented, and where omitted it was usually not the author's fault, but because of lack of opportunity. President Glover did his utmost to make use of all the talent that was on hand by running two sessions from the very beginning; but the program was very large, and it is likely that some were not afforded an opportunity to present their papers, and many excellent papers presented were, unfortunately, not discussed for the same reason.

THE CLINIC.

The entire last day was devoted to operations upon the large list of subjects Dr. Fowler and his committee had gathered at the operating room of the Ontario Veterinary College, rear of No. 153 Richmond Street West. A complete report of this clinic, together with a report on the condition of each subject operated on, to date, will be published in the next issue of the REVIEW.

THE BANQUET.

The banquet was held at the famous McConkey's on Thursday evening, August 24, and was largely attended. The fact that Dr. Rutherford officiated as toastmaster is sufficient evidence that the evening was an enjoyable one and the banquet a success. The following toasts were responded to:

"The King" ("God Save the King"). "The President of the United States" ("The Star-Spangled Banner"). "The City of Toronto," Mayor Geary. "Contributors to the Advancement of Veterinary Science," Dr. W. Horace Hoskins. "The Live-Stock Industry of Canada," Dr. G. C. Creelman. "Veterinary Sanitary Service," Dr. A. D. Melvin. "The Royal College of Veterinary Surgeons," Professor Hobday, London. "Veterinary Education in the United States," Dr. G. H. Glover.

"Veterinary Education in Canada," Dr. E. A. A. Grange. "The Practitioner," Dr. Fred Torrance. "The Pacific Slope," Dr. S. B. Nelson and Dr. R. A. Archibald. "The Press." Dr. R. W. Ellis. "The Ladies," Dr. R. P. Lyman.

Dr. Rutherford explained that it was customary at affairs of that kind in English countries to have a toast to the King, and asked the audience to rise and drink a toast to "The King," whereupon the orchestra struck up the national air, to which the Canadians present responded in song, as did also a *few* from the States. The toastmaster permitted them to resume their seats after the singing and then asked them, almost immediately, to rise and drink a toast to "The President of the United States." The great majority, being from the States, stood ready to burst forth in "The Star-Spangled Banner," but the orchestra, which was Canadian, "failed to produce," and after several ineffectual attempts to strike the air, gave it up. The incident produced sufficient amusement, however, to make up for the failure in the patriotic outburst. Between the toasts given above, the banqueters were also treated to a little diversion by a character artist, who appeared upon the orchestra balcony and sang several sketchy little songs. So that, altogether, the banquet was a very nice affair.

THE PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The Pennsylvania State Veterinary Medical Association held a successful and highly satisfactory semi-annual meeting at the Monongahela House, Smithfield and Water streets, Pittsburgh, Pa., September 5, 1911.

Forty-six members responded to roll call and twelve guests attended the entire session.

The following papers were read and ably discussed:

E. A. Cahill, "The Value of Serum Therapy to the General Practitioner."

S. H. Gilliland, "The Control of Rabies."

H. P. Hoskins (read by W. H. Hoskins), "The Treatment of Pneumonia and Pleurisy."

T. E. Munce, "Closer Relationship between the Veterinarian and the State Livestock Sanitary Board."

Twenty applicants were favorably considered, and the following names added to the membership list: Daniel M. Mackey, Cameron, W. Va.; C. H. Huber, Rural Valley; John O. Eyman, McKeesport; C. W. Mayer, Sunbury; Henry H. Haigh, Philadelphia; P. L. McBreen, New Kensington; Anthony Montgomery, Elderton; S. E. Bitler, Turbotville; John F. McDonough, Philadelphia; J. C. McNeil, Pittsburg; F. N. Sherrick, Connellsville; W. E. Wight, Kullare; F. G. Whitehead, McKeesport; John H. Turner, Wellsboro; Benj. Gunner, Sewickley; M. P. Hendrick, Meadville; W. S. Gimper, Harrisburg; D. R. Royer, Jamestown; Jas. L. Doritt, Union City; J. H. Wise, Time.

Luncheon and dinner was provided for to all the members of the Association on invitation by the Western Pennsylvania Medical Association.

JOHN REICHEL,
Secretary.

LIST OF ACCREDITED VETERINARY COLLEGES (U. S. Dept. Agr., B. A. I. Circular 150-A)—The following list of accredited veterinary colleges, graduates of which are eligible for the civil service examination for the position of veterinary inspector in the United States Department of Agriculture, Bureau of Animal Industry, is hereby approved in lieu of that published in Regulation XXIV. of Bureau of Animal Industry Circular 150, "Regulations Governing Entrance to the Veterinary Inspector Examination:" *

Alabama Polytechnic Institute, College of Veterinary Medicine.
Chicago Veterinary College.
Cincinnati Veterinary College.
Colorado State College, Division of Veterinary Science.
George Washington University, College of Veterinary Medicine.
Grand Rapids Veterinary College. †
Indiana Veterinary College.
Iowa State College, Division of Veterinary Medicine.
Kansas City Veterinary College.
Kansas State Agricultural College, Veterinary Department.
McKillop Veterinary College.
New York-American Veterinary College.
New York State Veterinary College.
Ohio State University, College of Veterinary Medicine.
San Francisco Veterinary College.
State College of Washington, Veterinary Department.
University of Pennsylvania, School of Veterinary Medicine.
University of Toronto, Ontario Veterinary College, to include only those graduated during or prior to 1897.

* This list is subject to change. The failure of any college to comply with the provisions of the regulations will necessitate removal from the list.

† To include only those graduates who have pursued the study of veterinary medicine at this college or in some other accredited college for three years.

NEWS AND ITEMS.

A. V. M. A. NOTES.

A MOTION was passed by the A. V. M. A. to hold a five-day session instead of four days. This, with the day for the "Associated Faculties," will make six busy days.

A RESOLUTION was passed in the "Associated Faculties" asking the A. V. M. A. to print its proceedings and papers; same was also passed by the A. V. M. A.

A RESOLUTION was passed in the Associated Faculties and Examining Boards, asking the secretary of said association to compile a list of officers and members of state boards and send a copy of same to all members of said association.

A RESOLUTION was passed condemning the practice of certain agricultural colleges encouraging agricultural students to conduct tuberculin testing, it being thought that sooner or later this practice would bring the work in disrepute.

THE pathologists in attendance at the Toronto meeting met and decided to ask a division in the program of the A. V. M. A. next year, in which purely technical papers will be presented and discussed. These to be along the line of pathology and bacteriology.

A RESOLUTION was passed in the Associated Faculties and Examining Boards that a committee be appointed to direct the attention of the post-office authorities to the fact that correspondence schools purporting to give veterinary training are frauds; and thus put them out of business by excluding their mail from the mails.

AS THE result of the presentation by Dr. I. E. Newsom (Professor of Anatomy, Division of Veterinary Science, Colorado State College) of a paper on anatomical nomenclature, calling attention to its chaotic condition, a resolution was passed in the "Associated Faculties" to the effect that the incoming president (Dr. S. Stewart) appoint a committee on anatomical nomenclature, to report to said association at its convenience.

THE resolution adopting the uniform degree Doctor of Veterinary Medicine to be abbreviated "D. V. M." which was passed by the Missouri Valley Veterinary Association, the Chicago Veterinary Association and the Association of Federated Colleges, was passed by both the Association of Veterinary Faculties and Examining Boards and the American Veterinary Medical Association.

HORSE SHOW NEWS.

Forty thousand dollars in cash, in addition to numerous trophies and prizes will be awarded at the last horse show which Madison Square Garden will house from November 18 to 25 next, according to the preliminary list issued the first week in September by the directors of the National Horse Show of America, Limited.

This small fortune will be divided among 152 classes embracing every type of horse from the Lilliputian Shetland pony to the Brobdignagian Clydesdale. It will be the twenty-seventh annual exhibit of America's premier horse show organization, and it bids fair to excel all of its predecessors from an entry, quality and spectacular standpoint.

While the international military contests in which the crack riders of Europe will compete against Uncle Sam's cleverest cavalymen may be second to the exhibition at Olympia in point of entries, judging from the picked riders who are coming it should equal, if not excel the London show in execution.

Lieutenant C. F. Walwyn, of the Royal Horse Artillery of England, who won the Canadian Challenge Cup, presented by the Hon. Adam Beck, of Toronto last year, on his horse "The Nut," is coming over to defend the trophy; and accompanying him on the British team will be Colonel P. A. Kenna, V.C.D.S.O., Lieutenant Walter Brooke and Lord Decies, who married Miss Vivian Gould last year. The names of the other European officers who are coming will be announced later on.

Thirty-six of the 152 classes are to be judged as breeding stock. There are no changes in the classification for runners and trotters from last year. There are two classes for Morgan horses with prizes aggregating \$350 for stallions, 4 years old and over, and mares 4 years old and over.

Frederick M. Davies has offered prizes for an entirely new class this year for horses and delivery wagons. The horses are to

be shown in single harness to delivery wagons and must have been used for local delivery for at least three months before the time of closing the entries.

Alfred G. Vanderbilt, president of the National Horse Show Association, offers two cups in addition to cash prizes of \$1,890 for two of the great breeds of draft horses—Clydesdales and Percherons.

J. W. Harriman offers the "Nala" Challenge Cup, valued at \$850, for the best horse suitable to a gig, and one of the conditions is that professional drivers and dealers are not allowed to compete for it.

Robert A. Fairbairn, chairman of the Executive Committee, presents a cup in addition to a cash prize of \$150 for the spectacular event of the week—the broad water jump. The first trial commences at 15 feet, and is widened one foot at a time until the contest is decided.

The International Horse Show of London presents two champion cups, valued at \$500, one for horses over 15 hands 2 inches having taken a first or second prize in single harness at this show, and the other open to pairs having taken a first or second in double harness.

The English Hackney Society donates a gold cup, value \$500, for the best mare or gelding sired by a stallion registered in the English Hackney Stud Book, to be shown in single harness to a four-wheeled vehicle. This cup has to be won three times by the same exhibitor before it becomes his property. J. W. Harriman won it with "Lady Dilham" in 1907 and 1908, while Judge Moore annexed it in 1909 and 1910 with "Lady Seaton," so that a win this year for either Mr. Harriman or Judge Moore will be for "keeps."

Jay F. Carlisle's \$600 cup is for park teams (mares or geldings), to be shown before drags and to be driven by amateurs. This cup must be won twice by the same exhibitor. Fairmont Farms got a leg on it in 1909, and Judge Moore won it last year.

R. C. Vanderbilt and J. W. Harriman offer three cups in class 95 for ponies in harness not exceeding 12 hands 2 inches, to be driven by boys or girls (amateurs), under 12 years of age, the sons or daughters of gentlemen who are not in any way professionally interested in the purchase or sale of horses. E. Von der Horst Koch presents a champion cup in class 96, in which all ponies winning first and second prizes in classes 90, 92, 94 and

96 must compete, or they will forfeit the prize money and ribbons in their several classes.

Judge Moore gives a champion cup for heavyweight hunters, James T. Hyde offers \$50 in plate to lady riding the winner in class 127 for thoroughbred, green or qualified hunters. John McE. Bowan gives a cup for children's ponies, mares or geldings not exceeding 12 hands 2 inches, four years old or over. Richards M. Woods' \$200 cup in class 128 is for three qualified hunters from one hunt to be shown by the master, whips or members of the hunt in hunt uniform.

Rufus L. Patterson offers a challenge cup, value \$250, in class 109 for ladies' saddle horses not under 15 and not exceeding 15.3 hands. Fell Lowry's \$150 cup is for lady's saddle horse, over 15.2 hands, four years old or over, up to carrying 160 pounds. Must be ridden by ladies on side saddles, but this rule does not apply to preliminary trials.

E. T. Stotesbury, of Philadelphia (J. Pierpont Morgan's partner), offers a cup open to pairs of horses over 15 hands and not exceeding 15.2 having taken a first at this show. Alfred B. Maclay's cup is for hunters that have been hunted at least eight times during the season of 1910-11, with some recognized pack of hounds. F. Ambrose Clark gives a cup, value \$150, in class 135 for thoroughbred mares or geldings not under three or over seven years of age and not under 15.3 suitable to become hunters. J. Murling presents two cups in class 139 for teams of two officers of the same nationality, the fences to be taken two abreast (twice around).

Charles A. Baudoine gives a \$200 cup for pairs of mares or geldings to be shown to a lady's phaeton and ladies to drive. Brewster and Company give a \$200 cup for pairs of horses (mares or geldings), to be shown before a demi-mail, spider or Stanhope phaeton for park use. Fiss, Doerr and Carroll present a \$500 cup for road teams four years old or over, while Louis Sherry has donated a cup for the best collection of three harness horses, not under 15 hands, to be shown in single harness.

The Hotel Martinique presents the American Cup, value \$750, for jumping the course by teams of three officers of the same nationality (twice around). The Plaza Cup is for heavy chargers up to carrying 210 pounds. The Holland House offers a cup for the best saddle horse, while the Waldorf-Astoria Challenge Cup, presented by George C. Boldt, is for the best hackney or halfbred hackney (mare or gelding) bred in America, to be

shown in single harness to an appropriate two or four-wheeled vehicle.

As usual the competition for the Arrowhead Inn Challenge Cup, presented by Ben Riley for road teams, will be the feature of the opening afternoon's program.

A select number of the best riders in the New York traffic squad will compete in class 122.

Eighteen judges of both national and international fame will award the \$40,000 in cash and other trophies which will be contested for.

Lord Decies will have associated with him in judging the officers' chargers and militia mounts and in awarding the ribbons in this class, Colonel William Hendrie, of Hamilton, Canada, and Major Henry T. Allen, U. S. A., Washington, D. C.

Two Canadians, Dr. Charles McEachran, of Montreal, and Colonel William Hendrie, of Hamilton, will pass judgment on the Clydesdales, Percherons and Heavy Draft Teams.

Senator Joseph W. Bailey, the silver-tongued orator of Texas, will judge the trotters and roadsters in conjunction with Horace White, of Syracuse, N. Y., and De Witt C. Flanagan, of New York City.

John E. Madden, of Kentucky, is the sole judge of thoroughbreds, as is Joseph E. Widener, of Philadelphia, in the classes for ponies in harness, pony tandems and four-in-hands.

E. Von der Horst Koch and John R. Townsend, of New York, are the jurists in the Harness Horse, Four-in-Hand, Tandems and Appointment classes, while A. S. Craven, of Greenwood, Va., and D. B. Sharp, of Berwin, Pa., will judge the Hunters and Jumpers.

Those who will select the prize winners in the classes for saddle horses and ponies under saddle are R. Lawrence Smith, Smithtown, L. I.; Joseph Laroque, New York, and S. Taber Willets, Roslyn, L. I.

G. Howard Davison, of Millbrook, New York, will select the winners in the Hackney and pony breeding classes, and R. L. Agassiz, of Boston, will judge the polo ponies, polo pony stallions with get, and brood mares.

Secretary James T. Hyde announces that entries for all classes close on Thursday, October 26.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list:

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary
Alumni Ass'n, N. Y.-A. V. C.	.....	141 W. 54th St.	J. F. Carey, East Orange, N. J.
American V. M. Ass'n	.....	.....	C. J. Marshall, Philadelphia.
Arkansas Veterinary Ass'n	.....	.....	J. B. Arthur, Russellville.
Ass'n Médéciale Veterinaire Française "Laval"	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago	2d Fri. ea. mo.	Chicago	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., So. Omaha	3d Mon. ea. mo.	S. Omaha, Neb.	E. J. Jackson, So. Omaha.
California State V. M. Ass'n	.....	San Francisco.	J. J. Hogarty, Oakland.
Central Canada V. Ass'n	.....	Ottawa	A. E. James, Ottawa.
Central N. Y. Vet. Med. Ass'n	June and Nov.	Syracuse	W. B. Switzer, Oswego.
Chicago Veterinary Society	2d Tues. ea. mo.	Chicago	D. M. Campbell, Chicago.
Colorado State V. M. Ass'n	.....	.....	B. F. Kaupp, Ft. Collins.
Connecticut V. M. Ass'n	Feb. 6, 1912.	Hartford	B. K. Dow, Willimantic.
Essex Co. (N. J.) V. M. A.	3d Mon. ea. mo.	Newark, N. J.	J. F. Carey, East Orange, N. J.
Genesee Valley V. M. Ass'n	.....	.....	J. H. Taylor, Henrietta.
Georgia State V. M. A.	Dec. 21-22, 1911.	Atlanta	P. F. Bahnsen, Americus.
Hamilton Co. (Ohio) V. A.	.....	.....	Louis P. Cook, Cincinnati.
Idaho Ass'n of Vet. Graduates	Oct. 19-12, 1911.	Boise	G. E. Noble, Boise.
Illinois State V. M. Ass'n	Call of President	.....	L. A. Merillat, Chicago.
Indiana Veterinary Association	.....	.....	E. M. Bronson, Hartford City
Iowa Veterinary Ass'n	.....	.....	H. C. Simpson, Denison.
Kansas State V. M. Ass'n	.....	.....	B. Rogers, Manhattan.
Kentucky V. M. Ass'n	.....	.....	D. A. Piatt, Lexington.
Keystone V. M. Ass'n	.....	.....	E. H. Yunker, Phila.
Louisiana State V. M. Ass'n	.....	.....	E. P. Flower, Baton Rouge.
Maine Vet. Med. Ass'n	October, 1911.	Walderville	C. W. Watson, Brunswick
Maryland State Vet. Society	.....	Baltimore	H. H. Counselman, Sec'y.
Massachusetts Vet. Ass'n	Monthly	Boston	J. H. Seale, Salem.
Michigan State V. M. Ass'n	Feb., 191	Mich. Agr. Col.	Judson Black, Richmond.
Minnesota State V. M. Ass'n	.....	.....	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n	.....	.....	J. C. Robert, Agricultural Col.
Missouri Valley V. Ass'n	.....	.....	Hal. C. Simpson, Denison, Ia.
Missouri Vet. Med. Ass'n	.....	.....	D. L. Luckey,
Montana State V. M. A.	.....	Helena	W. S. Swank, Miles City.
Nebraska V. M. Ass'n	January, 1912.	Lincoln	W. H. Tuck, Weeping Water.
New York S. V. M. Soc'y	September, 1912.	Utica	H. J. Milks, Ithaca, N. Y.
North Carolina V. M. Ass'n	June 1912	Ra. eigh.	M. J. Ragland, Salisbury.
North Dakota V. M. Ass'n	Jan. 1912	Agricul. Col.	C. H. Babcock, New Rockford.
North-Western Ohio V. M. A.	Feb. and Nov.	Lima	A. J. Kline, Wauseon.
Ohio State V. M. Ass'n	.....	.....	O. V. Brumley, Columbus.
Ohio Soc. of Comparative Med.	Annually	Up'r Sandusky	F. F. Sheets, Van Wert, Ohio
Ohio Valley Vet. Med. Ass'n	.....	.....	J. C. Howard, Sullivan.
Oklahoma V. M. Ass'n	.....	.....	M. P. Hunt, Enid.
Ontario Vet. Ass'n	Annually	Toronto	C. H. Sweetapple, Toronto.
Pennsylvania State V. M. A.	March, 1912.	Philadelphia	John Reichel, Glenolden
Philippine V. M. A.	Call of President	Manila	David C. Kretzer, Manila.
Portland Vet. Med. Ass'n	4th Tues. ea. mo.	Portland, Ore.	Sam. B. Foster, Portland, Ore.
Province of Quebec V. M. A.	.....	Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n	Jan. and June.	Providence	J. S. Pollard, Providence
South Carolina Ass'n of Veterinarians	.....	.....	Clarence E. Smith, Greenville
So. Illinois V. M. and Surg. A.	.....	.....	F. Hockman, Louisville.
St. Louis Soc. of Vet. Inspectors	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis	Wm. T. Conway, St. Louis, Mo.
Schuylkill Valley V. M. A.	.....	.....	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn.	.....	Philadelphia	B. T. Woodward, Wash'n, D. C.
South Dakota V. M. A.	2d Tues. July '11	Watertown	S. W. Allen, Watertown.
Southern Auxiliary of California State V. M. Ass'n	Jan. Apl. Jy. Oct.	Los Angeles	A. D. Hubbell, Los Angeles.
So. St. Joseph Ass'n of Vet. Insp.	4th Tues. ea. mo.	407 Ill. Ave.	H. R. Collins, So. St. Joseph.
Tennessee Vet. Med. Ass'n	.....	.....	A. C. Topmiller, Murfreesboro
Texas V. M. Ass'n	Call Exec. Com.	St. P.-Minneap	R. P. Marsteller, College Sta.
Twin City V. M. Ass'n	2d Thu. ea. mo.	.....	S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n	.....	.....	G. T. Stevenson, Burlington.
Veterinary Ass'n of Alberta	.....	.....	C. H. H. Sweetapple, For.
Vet. Ass'n Dist. of Columbia	3d Wed. ea. mo.	514-9th St., N. W.	Saskatchewan, Alta., Can.
Vet. Ass'n of Manitoba	Not stated	Winnipeg	M. Page Smith, Wash., D. C.
Vet. Med. Ass'n of N. J.	.....	.....	F. Torrance, Winnipeg.
V. M. Ass'n, New York City	1st Wed. ea. mo.	141 W. 54th St.	W. Herbert Lowe, Paterson.
Veterinary Practitioners' Club	Monthly	Jersey City	R. S. McKellar, N. Y. City.
Virginia State V. M. Ass'n	1st & 3d Fri. Eve.	.....	A. F. Mount, Jersey City.
Washington State Col. V. M. A.	.....	Pullman	W. G. Chrisman, Raleigh.
Washington State V. M. A.	.....	Seattle	R. J. Donohue, Pullman.
Western Penn. V. M. Ass'n	1st Wed. ea. mo.	Pittsburgh	I. T. Seely, Seattle.
Wisconsin Soc. Vet. Grad	F. Weitzell, Allegheny.
York Co. (Pa.) V. M. A.	J. P. West, Madison.
			E. S. Bausticker, York, Pa.

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An interesting list of biological products will be found on page 11 of this issue of the REVIEW. These products have so successfully met the requirements of the veterinary profession, that the list has outgrown its space, which has been increased from a half to a full page. An inquiry addressed to the SORBY VACCINE Co., Chicago, will bring you full particulars.